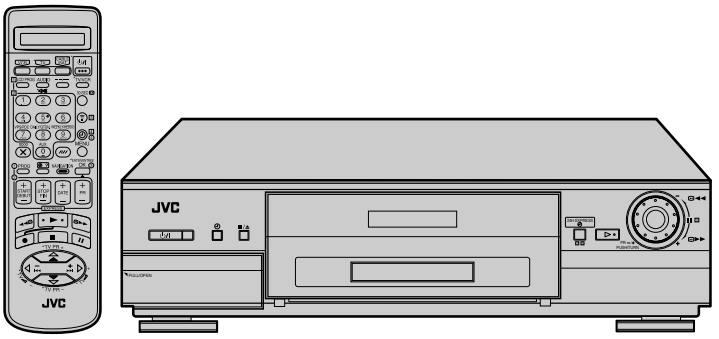
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S9850EU/EK



SHOWVIEW® DELUXE

Hi-Fi SVHS 625

Super VHS ET

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S9850EU)*

GENERAL

Power requirement : AC 220 V – 240 V∿, 50 Hz/60 Hz
Power consumption
  Power on : 23 W
  Power off : 4.8 W
Temperature
  Operating : 5°C to 40°C
  Storage : –20°C to 60°C
Operating position : Horizontal only
Dimensions (WxHxD)
  : 435 mm x 105 mm x 343 mm
Weight : 4.7 kg
Format : S-VHS/VHS PAL standard
Maximum recording time
  (SP) : 240 min. with E-240 video cassette
  (LP) : 480 min. with E-240 video cassette
  (EP) : 720 min. with E-240 video cassette

VIDEO/AUDIO

Signal system : PAL-type colour signal and CCIR monochrome signal, 625 lines 50 fields
Recording system : DA4 (Double Azimuth) head helical scan system
Signal-to-noise ratio: 45 dB
Horizontal resolution
  (SP/LP) : 250 lines (VHS)
  400 lines (S-VHS)
  (EP) : 220 lines (VHS)
  350 lines (S-VHS)
Frequency range : 70 Hz to 10,000 Hz (Normal audio)
  20 Hz to 20,000 Hz (Hi-Fi audio)
Input/Output : 21-pin SCART connectors:
  IN/OUT x 1, IN/DECODER x 1
  RCA connectors:
  VIDEO IN x 1, AUDIO IN x 1,
  AUDIO OUT x 1
  S-Video connectors:
  IN x 1, OUT x 1

TUNER/TIMER

TV channel storage capacity
  : 99 positions (+AUX position)
Tuning system : Frequency synthesized tuner
Channel coverage : VHF 47 MHz – 89 MHz/
  104 MHz – 300 MHz/
  302 MHz – 470 MHz
  UHF 470 MHz – 862 MHz
Aerial output : UHF channels 22 – 69 (Adjustable)
Memory backup time
  : Approx. 10 min.

ACCESSORIES

Provided accessories
  : RF cable,
  S-Video cable,
  Satellite Controller,
  Infrared remote control unit,
  "R6" battery x 2

Specifications shown are for SP mode unless otherwise specified.
E.& O.E. Design and specifications subject to change without notice.

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The following table lists the differing points between models (HR-S9850EK and HR-S9850EU) in this series.

ITEM \ MODEL	HR-S9850EK	HR-S9850EU
POWER PLUG	3PIN(CLASSII)	CEE(CLASSII)
VIDEO SYSTEM	PAL/NTSC ON PAL TV	PAL/MESECAM(MANUAL)/NTSC ON PAL TV
BROADCASTING STANDARD	I	B/G, D/K
STEREO DECODER	NICAM	NICAM/A2
RF OUT SYSTEM [INITIAL]	I	G/K
VCR PLUS+	VIDEOPLUS+ DELUXE	SHOWVIEW DELUXE
VPS(AUTO)	NOT USED	USED
INITIAL(TIMER)	OFF	GER, AUS, SWISS:ON, OTHER:OFF
LANGUAGE[INITIAL](ON SCREEN DISPLAY)	ENG	13 LANG.[E]

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded ( ) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape 3) Spacers 5) Barrier
   2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

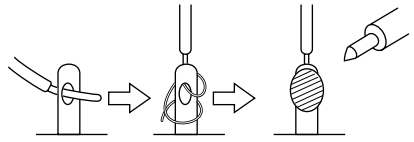


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

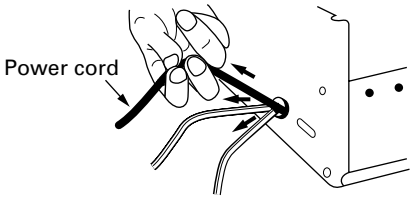


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number :** E03830-001
    2) **Required tool :** Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

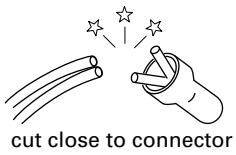


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

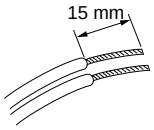


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

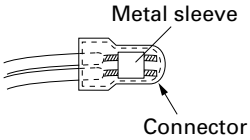


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

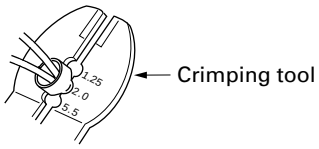


Fig.6

(5) Check the four points noted in Fig.7.

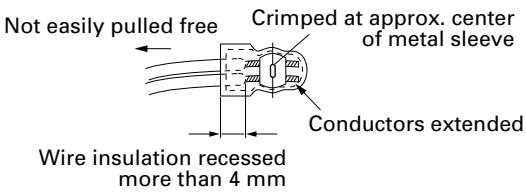

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

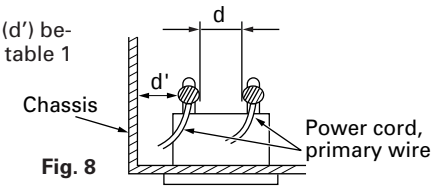


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

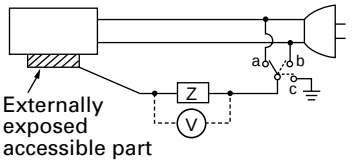


Fig. 9

5. Grounding (Class Ⅰ model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

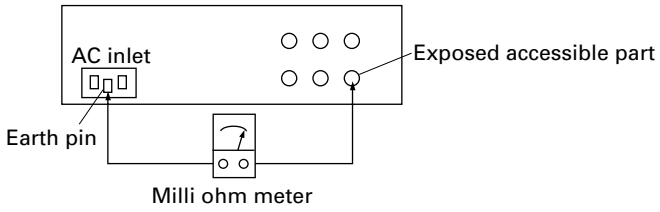


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

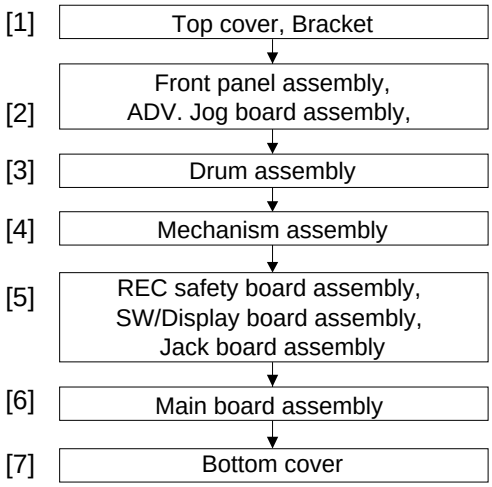
Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1
DISASSEMBLY

1.1 Disassembly flow chart

This flowchart lists the disassembling steps for the cabinet parts and P. C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 How to read the disassembly and assembly

<Example>

Step/ Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover, Bracket	D1	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a),(W1a), CN1(WR1a), 2(S1c)	<Note 1a>

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig. No. showing procedure or part location.
(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:
- **The bracketed ( ) WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.**

(5) Adjustment information for installation

1.3 Disassembly/assembly method

Step/ Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover, Bracket	D1	4(S1a), (S1b) 2(S1c)	
[2]	Front panel assembly (ADV. Jog board assembly)	D2	CN3012(WR2a) 4(L2a), 2(L2b),3(L2c) 2(S2a)	<Note 2a> <Note 2b>
[3]	Drum assembly (Inertia plate) (Roller arm assy)	D3	CON1(WR3a), CN1(WR3b), (S3a), (S3b), (S3c) 4(L3a) (P3), (L3b)	<Note 2b>
[4]	Mechanism assembly	D4	CN2001(WR4a), (S4a), (S4b), (S4c), (S4d),2(L4a)	<Note 2b> <Note 4a>
[5]	REC safety board assembly, SW/Display board assembly Jack board assembly	D5	(L5a), CN7001(WR5a),4(L5b) CN7191(WR5b)	<Note 2b> <Note 5a> <Note 5b>
[6]	Main board assemby	D6	(S6a),2(S6b),2(S6c)	
[7]	Bottom cover	D7	4(L7a), Foot (rear), 4(L7b), Foot ass'y, 2 (S7a), 4 (L7c), 3 (L7d)	<Note 7a>

<Note 2a>
- When reattaching the Front panel assembly, make sure that the door opener "a" of the Cassette holder assembly is lowered in position prior to the reinstallation.
- When reattaching the Front panel assembly, pay careful attention to the jack "b" at the Jack board assembly to make it fit the hole of the Front panel assembly.

<Note 2b>
- Be careful not to damage the connector and wire etc. during connection and disconnection. When connecting the wire to the connector, be careful with the wire direction.

<Note 4a>
- When it is required to remove the screws (S4a to S4b) retaining the Mechanism assembly, please refer to the "Procedures for Lowering the Cassette holder assembly". (See on pages 1-2.)
- When removing the Mechanism assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Mechanism assembly.
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors and switch on the Main board assembly.
- The wire (WR4a) has excess length that may be loose, as it is quite long. After inserting the wire and connectors, the loose portion of the wire should be taken up and accommodated between the A/C head base and the main deck.

<Note 5a>
- The REC safety board assembly is attached to the SW/Display board assembly. It is therefore necessary to remove the REC safety board assembly before removing the SW/Display board assembly.

<Note 5b>
- When reattaching the Jack board assembly, should be attach the Jack board assembly to the Bottom chassis before attaching the SW/Display board assembly.

<Note 7a>
- When attaching the Bottom cover, make sure that the Earth plate of the Bottom cover is passed through the hole of the Bottom chassis and then touches the GND (Ground) on the Main board assembly.

Procedures for Lowering the Cassette holder assembly

As the mechanism of this unit is integrated with the Housing assembly, the holder must be lowered and the two screws unscrewed when removing the Mechanism assembly.

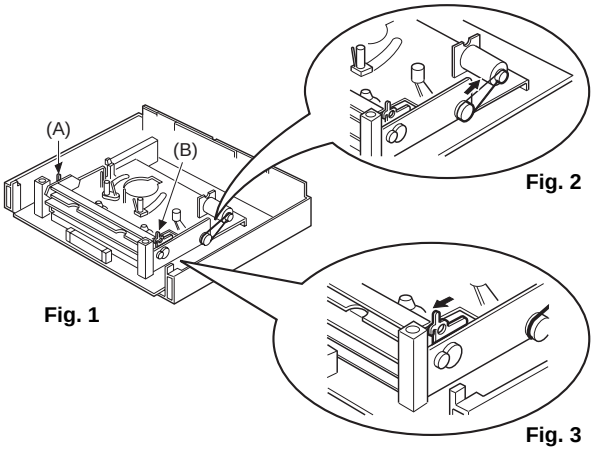


Fig. 1

Fig. 2

Fig. 3

Turn the loading motor pulley in the direction as indicated by Fig.2. As both (A) and (B) levers are lodged twice, push the levers in the direction as indicated by Fig.3 to release them. When pushing the levers, do it in the order of (A), (B), (B), (A). When the holder has been lowered, turn the pulley until the cassette holder is securely in place without allowing any up/down movement.

Procedures for Lowering the Cassette holder assembly

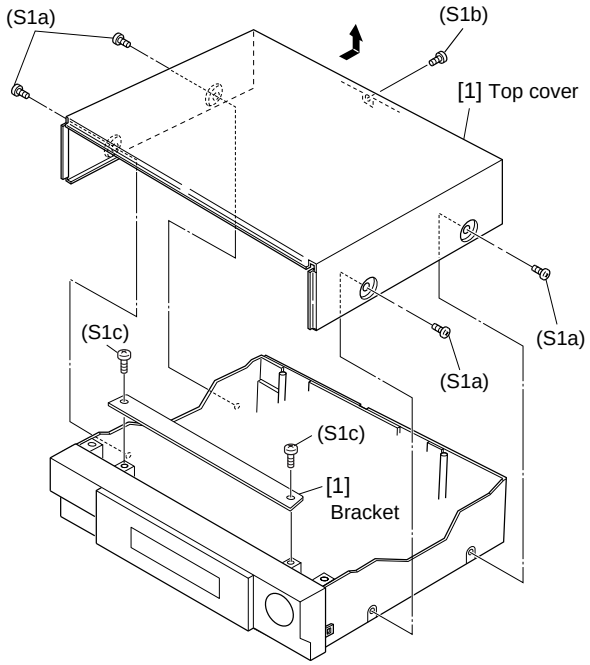


Fig. D1

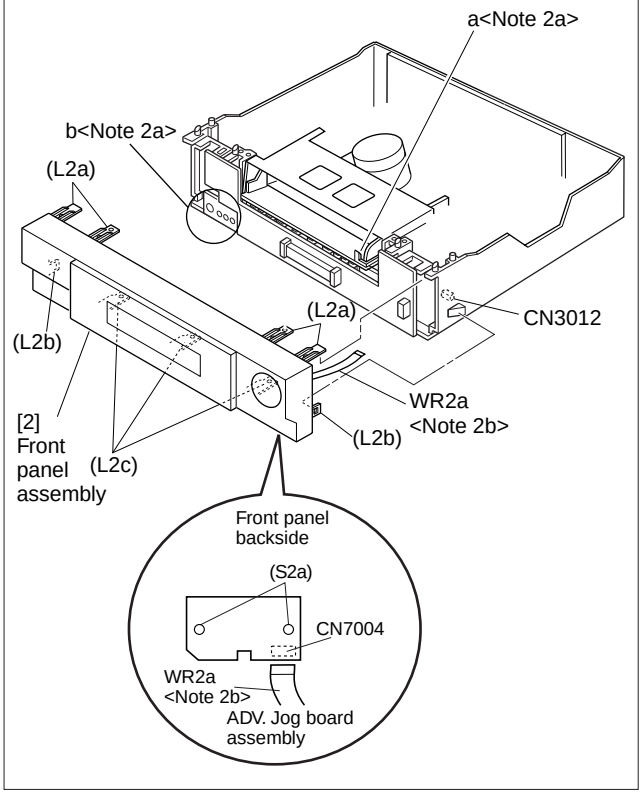


Fig. D2

Note: When installing the Drum assembly, secure the screws (S3a to S3c) in the order of a, b, c.

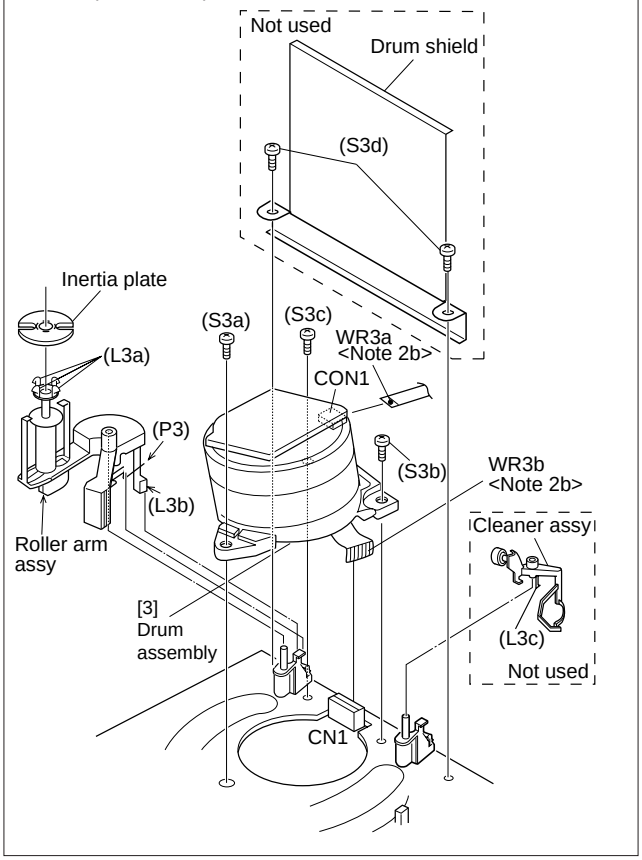


Fig. D3

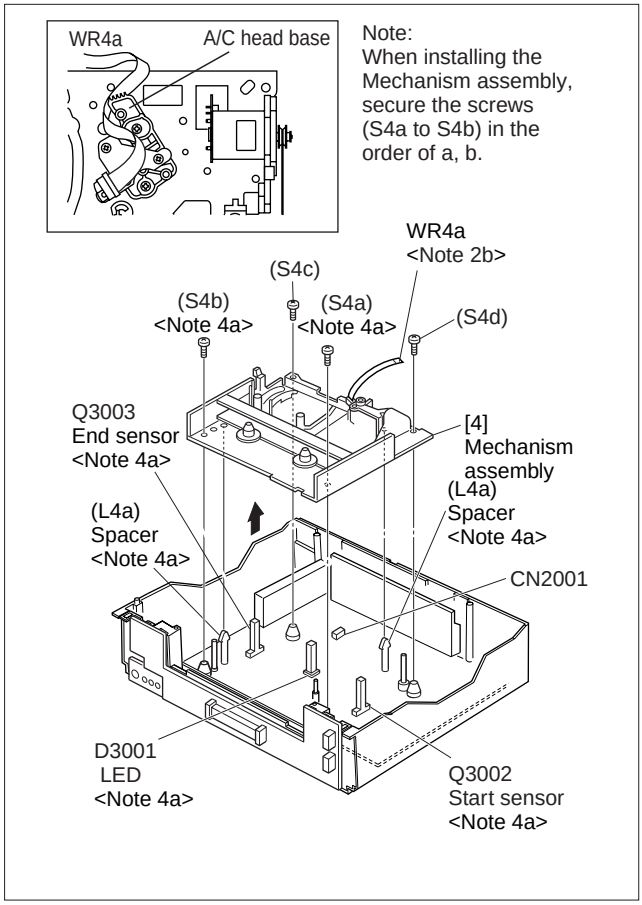


Fig. D4

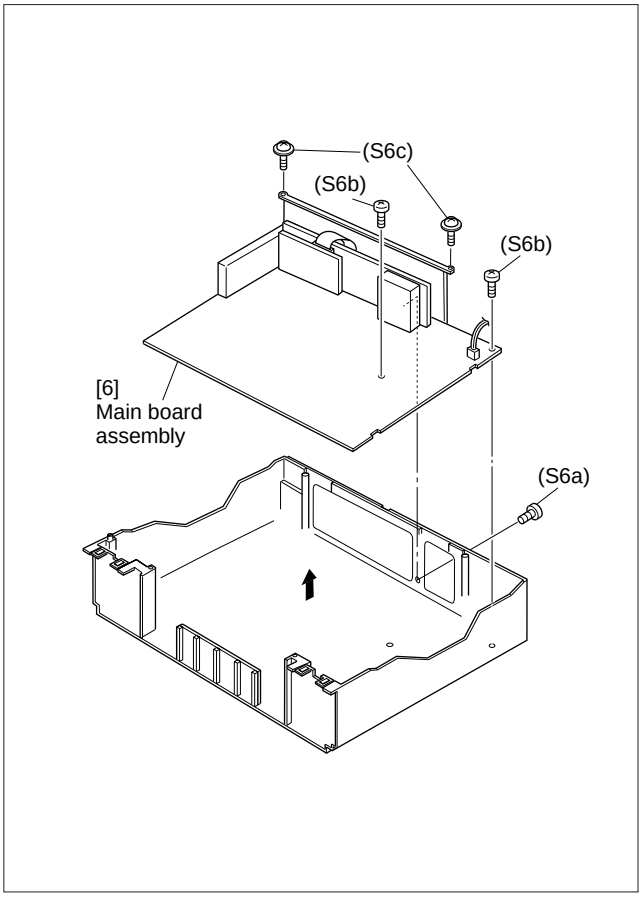


Fig. D6

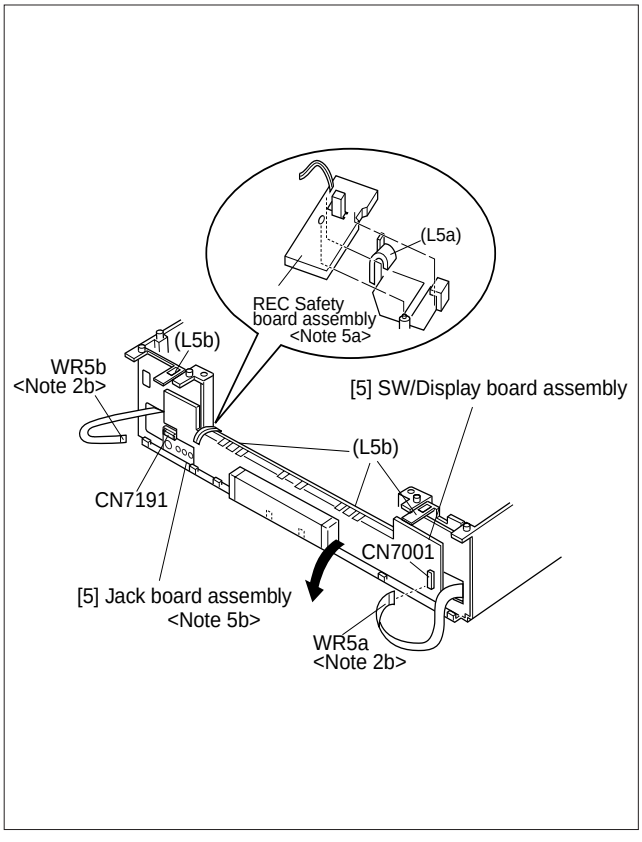


Fig. D5

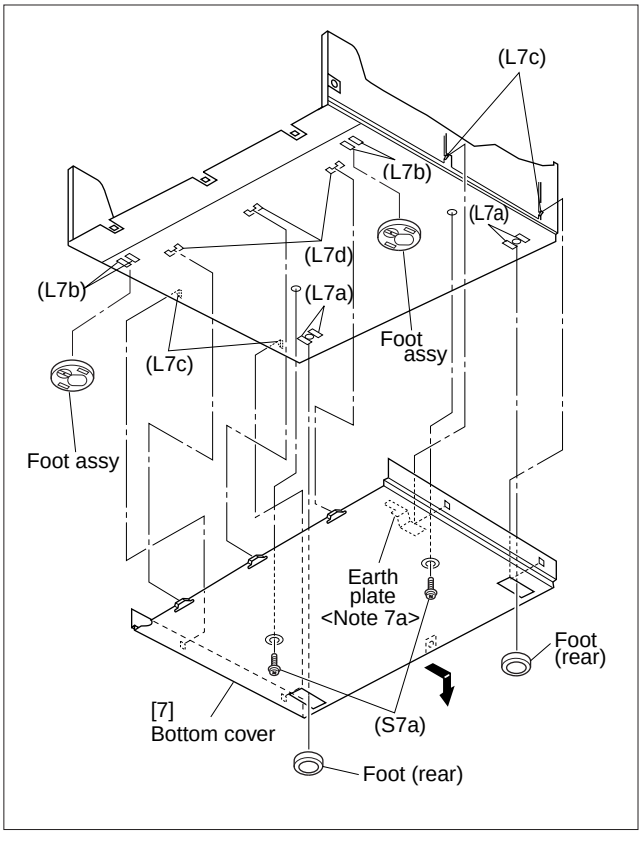


Fig. D7

1.4 Service position

This unit has been designed so that the Mechanism and Main board assemblies can be removed together from the chassis assembly. Before diagnosing or servicing the circuit boards, take out the major parts from the chassis assembly.

1.4.1 How to set the "Service position"

(1) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the Drum assembly.
(2) Lower the cassette holder to prepare for the removal of the Mechanism assembly screws. (Refer to the "Procedures for lowering the Cassette holder assembly" of 1.3 Disassembly/assembly method.)
(3) Remove the combined Mechanism and Main board assemblies.
(4) If any other major parts are used, remove them also.
(5) Connect the wires and connectors of the major parts that have been removed in steps (1) to (4). (Refer to Fig.1-4-1a.)
(6) Place the combined Mechanism, Main board and other board assemblies upside down.
(7) Insert the power cord plug into the power outlet and then proceed with the diagnostics and servicing of the board assembly.

Notes:

- **Before inserting the power cord plug into the power outlet, make sure that none of the electrical parts are able to short-circuit between the workbench and the board assembly.**
- **For the disassembly procedure of the major parts and details of the precautions to be taken, see "1.3 Disassembly/assembly method".**
- **If there are wire connections from the Main board and Mechanism assemblies to the other major parts, be sure to remove them (including wires connected to the major parts) first before performing step (2).**
- **When carrying out diagnosis and repair of the Main board assembly in the "Service position", be sure to ground both the Main board and Mechanism assemblies. If they are improperly grounded, there may be noise on the playback picture or FDP counter display may move even when the mechanism is kept in an inoperative status.**
- **In order to diagnose the playback or recording of the cassette tape, set the Mechanism assembly to the required mode before placing it upside down. If the mechanism mode is changed (including ejection) while it is in an upside down position the tape inside may be damaged.**

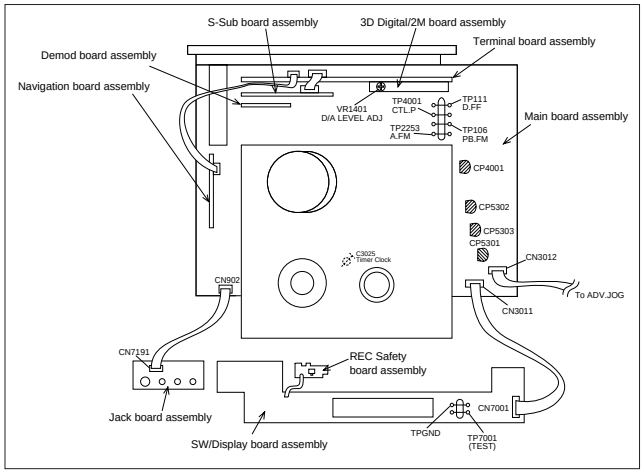


Fig. 1-4-1a

1.4.2 Precautions for cassette loading in the "Service position"

The REC safety board assembly detects cassette loading as well as cassette tabs. Therefore, after the assembly has been removed in the "Service position", it is required to set the switch manually on the REC safety board assembly when a cassette is loaded.

1.4.3 Cassette loading and ejection methods in the "Service position".

(1) Insert a cassette halfway in the Cassette holder assembly.
(2) Set the switch on the REC safety board assembly to on (by pressing the switch).
(3) As soon as the cassette starts to be loaded, set the switch on the REC safety board assembly to off (by releasing the switch).
(4) Now the desired operation (recording, playback, fast forward, rewind, etc.) is possible in this status.
(5) The switch on the REC safety board assembly does not have to be operated when ejecting a tape. But be sure to turn the set to the normal position before ejecting the tape.

Note:

- **In the "Service position", the cassette tabs cannot be detected and recording becomes possible even with a cassette with broken tabs such as the alignment tape. Be very careful not to erase important tapes.**

1.5 Mechanism service mode

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "Mechanism service mode".

1.5.1 How to set the "Mechanism service mode"

(1) Unplug the power cord plug from the power outlet.
(2) Connect TPGND and TP7001(TEST) on the board assembly with a jump wire. (Refer to Fig. 1-4-1a.)
(3) Insert the power cord plug into the power outlet.
(4) With lock levers (A) (B) on the left and right of the Cassette holder assembly pulled toward the front, slide the holder in the same direction as the cassette insertion direction. (For the positions of lock levers (A) (B), refer to the "Procedures for lowering the Cassette holder assembly" of 1.3 Disassembly/assembly method.)
(5) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.

1.6 Jig RCU mode

This unit uses the following two modes for receiving remote control codes.

1) User RCU mode : Ordinary mode for use by the user.
2) Jig RCU mode : Mode for use in production and servicing.

When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). As both of the above two modes are stored in the EEPROM, it is required to set the VCR back to the User RCU mode each time that an adjustment is made or to check that the necessary operations have been completed. These modes can be set by the operations described below.

1.6.1 Setting the Jig RCU mode

(1) Unplug the power cord plug from the power outlet.
(2) Press and hold the "REC" and "PAUSE" buttons on the VCR simultaneously, while plugging the power cord plug into the power outlet.
When the VCR is set to the Jig RCU mode, the symbols (" : ") in the time display of the FDP are turned off.

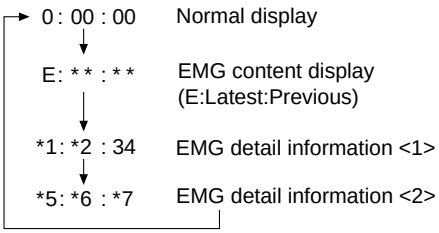
1.6.2 Setting the User RCU mode

(1) Turn off the power.
(2) Press the "REC" and "PAUSE" buttons of the VCR simultaneously. Alternatively, transmit the code "80" from the Jig RCU.

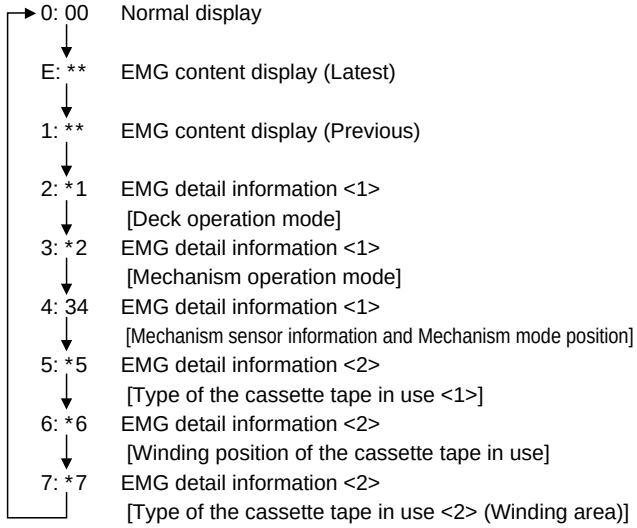
1.7 Emergency display function

This unit has a function for storing the history of the past two emergencies (EMG) and displaying them on each FDP (or OSD). With the status of the VCR and mechanism at the moment an emergency occurred can also be confirmed.

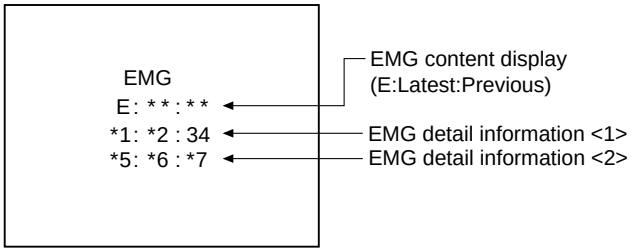
FDP display model
[FDP display]



FDP (7segment LED) display model
[FDP display]



OSD display model
[OSD display]



Notes:
- **The EMG detail information <1><2> show the information on the latest EMG.**
  It becomes " – – : – – : – –" when there is no latest EMG record.
- **When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).**

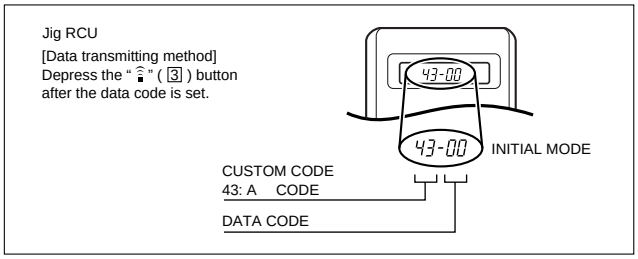
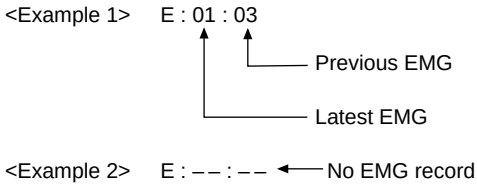


Fig. 1-7a Jig RCU [PTU94023B]

1.7.1 Displaying the EMG information

(1) Transmit the code "59" from the Jig RCU.
The FDP shows the EMG content in the form of "E: * * : * * ".



(2) Transmit the code "59" from the Jig RCU again.
The FDP shows the EMG detail information <1> in the form of " * 1 : * 2 : 34 ".
  * 1 : Deck operation mode at the moment of EMG
  * 2 : Mechanism operation mode at the moment of EMG
  3– : Mechanism sensor information at the moment of EMG
  –4 : Mechanism mode position at the moment of EMG

(3) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <2> in the form of " * 5 : * 6 : * 7 ".
  * 5 : Type of the cassette tape in use <1> .
  * 6 : Winding position of the cassette tape in use
  * 7 : Type of the cassette tape in use <2> (Winding area)

(4) Transmit the code "59" from the Jig RCU once again to reset the display.

Notes:
- **For the OSD display model, all EMG information are showed by transmitting first code from the Jig RCU.**
- **For the EMG content, see "1.7.3 EMG content description".**
- **For the EMG detail information <1> , see "1.7.4 EMG detail information <1> ".**
- **For the EMG detail information <2> , see "1.7.5 EMG detail information <2>".**

1.7.2 Clearing the EMG history

(1) Display the EMG history.
(2) Transmit the code "36" from the Jig RCU.
(3) Reset the EMG display.

1.7.3 EMG content description

Note: EMG contents “E08/E09” are for the model with Dynamic Drum (DD).

FDP	CONTENT	CAUSE
E01: Loading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the loading direction, [E:01] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. The mechanism is locked at the loading end due to the encoder position reading error during mode transition. 3. Power is not supplied to the loading MDA.
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. The mechanism is locked at the unloading end due to the encoder position reading error during mode transition. 3. Power is not supplied to the loading MDA.
E03: Take Up Reel Pulse EMG	When the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. However, the reel EMG is not detected in STILL/SLOW modes.	1. The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1) The idler gear is not meshed with the take-up reel gear; 2) The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3) The take-up reel sensor does not output the FG pulse. 2. The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The supply reel sensor does not output the FG pulse. 3. Power is not supplied to the reel sensors.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	1. The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. 2. The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. 3. The drum control voltage (DRUM CTL V) is not supplied to the MDA. 4. Power is not supplied to the drum MDA.
E05: Cassette Eject EMG	When the eject operation does not complete in 3 seconds after the start, [E:05] is identified, the pinch rollers are turned off and stopped, and the power is turned off. When the cassette insertion operation does not complete in 3 seconds after the start, the cassette is ejected. In addition, when the operation does not complete within 3 seconds after the start, [E:05] is also identified and the power is turned off immediately.	1. The cassette cannot be ejected due to a failure in the drive mechanism of the housing. 2. When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. 3. The sensor/switch for detecting the end of ejection are not functioning normally. 4. The loading motor drive voltage is lower than specified or power is not supplied to the motor (MDA). 5. When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off.However, the capstan EMG is not detected in STILL/SLOW/FF/REW modes.	1. The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). 2. The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. 3. The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. 4. Power is not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	1. The SW 5 V power supply circuit is shorted with GND. 2. The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	1. The absolute value sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. 4. The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	1. The FG sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. 4. The power to the sensor is not supplied. (Connection failure/soldering failure) 5. The FG pulse is not sent to the System Controller CPU. 6. The tilt motor is defective. (The soldered parts have separated.) 7. The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) 8. The tilt motor drive MDA - IC is defective. 9. Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). However, note that the reel EMG is not detected in the SLOW/STILL mode.	1. The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The FG pulse output from the supply reel sensor is absent. 2. The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The FG pulse output from the take-up reel sensor is absent. 3. The power to a reel sensor is not supplied.
EC1 or EU1: Head clog warning	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:C1] or [E:U1] is identified and recorded in the emergency history. During the period in which a head clog is detected, the FDP and OSD repeat the “3-second warning display” and “7-second noise picture display” alternately. EMG code : “E:C1” or “E:U1” / FDP : “U:01” / OSD : “Try cleaning tape.” or “Use cleaning cassette.” The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

Table 1-7-3a

1.7.4 EMG detail information <1>

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest EMG can be confirmed based on the figure in EMG detail information <1> .

[FDP/OSD display]

*1 : *2 : 34

*1 : Deck operation mode at the moment of EMG
*2 : Mechanism operation mode at the moment of EMG
3– : Mechanism sensor information at the moment of EMG
–4 : Mechanism mode position at the moment of EMG

Note:

- **For EMG detailed information <1>, the content of the code that is shown on the FDP (or OSD) differs depending on the parts number of the system control microprocessor (IC3001) of the VCR. The system control microprocessor parts number starts with two letters, refer these to the corresponding table.**

***1 : Deck operation mode**
[Common table of MN*, HD* and M3*]

Display		Deck operation mode
MN*/M3*	HD*	
00	-	Mechanism being initialized
01	00	STOP with pinch roller pressure off (or tape present with P.OFF)
02	01	STOP with pinch roller pressure on
03	-	POWER OFF as a result of EMG
04	04	PLAY
0C	0E	REC
10	11	Cassette ejected
20	22	FF
21	-	Tape fully loaded, START sensor ON, short FF
22	-	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	26	FWD SEARCH (variable speed) including x2-speed
2C	2E	INSERT REC
40	43	REW
42	-	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	47	REV SEARCH (variable speed)
4C	4C	AUDIO DUB
6C	6E	INSERT REC (VIDEO + AUDIO)
84	84	FWD STILL / SLOW
85	85	REV STILL / SLOW
8C	8F	REC PAUSE
8D	-	Back spacing
8E	-	Forward spacing (FWD transport mode with BEST function)
AC	AF	INSERT REC PAUSE
AD	-	INSERT REC back spacing
CC	CD	AUDIO DUB PAUSE
CD	-	AUDIO DUB back spacing
EC	EF	INSERT REC (VIDEO + AUDIO) PAUSE
ED	-	INSERT REC (VIDEO + AUDIO) back spacing

***2 : Mechanism operation mode**
[Common table of MN* and M3*]

Display		Mechanism operation mode
MN*	M3*	
00	00	Command standby (Status without executing command)
02	02	POWER OFF by EMG occurrence
04	04	Moving to the adjacent position in the LOAD direction
06	06	Moving to the adjacent position in the UNLOAD direction
08	08	Cassette ejection being executed / Cassette housing ejection being executed
-	0A	Mode transition to STOP with cassette ejection end
0A	0C	Cassette insertion being executed
0C	0E	Tape being loaded
0E	10	Tape being unloaded
10	12	Mode transition to STOP with pinch roller compression ON
12	14	Mode transition to STOP with pinch roller compression OFF
14	16	Mode transition to STOP with pinch roller compression OFF as a result of POWER OFF
16	18	Mode transition to STOP with pinch roller compression ON as a result of POWER ON
18	1A	Mode transition to PLAY
1A	1C	Mode transition to FWD SEARCH
1C	1E	Mode transition to REC
1E	20	Mode transition to FWD STILL / SLOW
20	22	Mode transition to REV STILL / SLOW
22	24	Mode transition to REV SEARCH
24	26	Mode transition from FF / REW to STOP
26	28	Mode transition to FF
28	2A	Mode transition to REW
2A	2C	4 sec. of REV as a result of END sensor going ON during loading
2C	2E	Short FF / REV as a result of END sensor going ON during unloading
2E	30	Mechanism position being corrected due to overrun
80	80	Mechanism in initial position (Dummy command)

[Table of HD*]

Display	Mechanism operation mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)

3– : Mechanism sensor information
[Common table of MN*, HD* and M3*]

Display	Mechanism sensor information				
	MN* / HD* S-VHS SW	M3* CASS SW	REC safety SW	Start sensor	End sensor
0-	VHS	Cassette insertion	Tab broken	ON	ON
1-	VHS	Cassette insertion	Tab broken	ON	OFF
2-	VHS	Cassette insertion	Tab broken	OFF	ON
3-	VHS	Cassette insertion	Tab broken	OFF	OFF
4-	VHS	Cassette insertion	Tab present	ON	ON
5-	VHS	Cassette insertion	Tab present	ON	OFF
6-	VHS	Cassette insertion	Tab present	OFF	ON
7-	VHS	Cassette insertion	Tab present	OFF	OFF
8-	S-VHS	Cassette ejection	Tab broken	ON	ON
9-	S-VHS	Cassette ejection	Tab broken	ON	OFF
A-	S-VHS	Cassette ejection	Tab broken	OFF	ON
B-	S-VHS	Cassette ejection	Tab broken	OFF	OFF
C-	S-VHS	Cassette ejection	Tab present	ON	ON
D-	S-VHS	Cassette ejection	Tab present	ON	OFF
E-	S-VHS	Cassette ejection	Tab present	OFF	ON
F-	S-VHS	Cassette ejection	Tab present	OFF	OFF

–4 : Mechanism mode position
[Common table of MN*, HD* and M3*]

Display			Mechanism mode position
MN*	HD*	M3*	
-0	-7	-	Initial value
-1	-0	-	EJECT position
-	-	-0	EJECT position (Cassette housing drive mode)
-2	-7	-	Housing operating
-	-	-1	Between EJECT and U / L STOP
-3	-1	-2	U / L STOP position
-	-	-3	Guide arm drive position
-4	-7	-4	Tape being loaded / unloaded (When the pole base is located on the front side of the position just beside the drum)
-5	-2	-5	Tape being loaded / unloaded (When the pole base is located on the rear side of the position just beside the drum)
-6	-7	-6	Pole base compressed position
-7	-3	-F	FF / REW position
-8	-7	-F	Between FF / REW and STOP with pinch roller compression ON
-9	-4	-F	STOP with pinch roller compression OFF
-A	-7	-E	Between STOP with pinch roller compression OFF and REV
-B	-5	-	REV (REV STILL / SLOW) position
-	-	-D	REV position
-	-	-C	Between REV and REV STILL / SLOW
-	-	-B	REV STILL / SLOW position
-C	-7	-	Between REV and FWD
-	-	-A	Between REV STILL / SLOW and FWD STILL / SLOW
-D	-6	-	FWD (FWD STILL / SLOW) position
-	-	-9	FWD STILL / SLOW position
-E	-7	-	Between FWD and PLAY
-	-	-8	Between FWD STILL / SLOW and PLAY
-F	-6	-7	PLAY position

Note:
- **In the case of the "HD*" microprocessor, as the display is always "-7" at any intermediate position between modes, the position of transitory EMG may sometimes not be located.**

1.7.5 EMG detail information <2>

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information <2> .

[FDP/OSD display]

*5 : *6 : *7

*5 : Type of the cassette tape in use <1>
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use <2> (Winding area)

Note:
- **EMG detail information <2> is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.**

***5 : Cassette tape type <1>**

Display	Cassette tape type <1>
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:
- **Cassette tape type <1> is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.**
- **If other value than those listed in the above table is displayed, the cassette tape type is not identified.**

***6 : Cassette tape winding position**

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 22 sections using a hex number from “00” to “15”.

“00” : End of winding
“15” : Beginning of winding
“FF or ––” : Tape position not identified

***7 : Cassette tape type <2> (Winding area)**

Display	Cassette tape type <2>	
00	Cassette type not identified	
07	Small reel, thick tape	T-5
08 - 0E	C cassette, thick tape	TC-10
09 - 15	C cassette, thick tape	TC-20P
0A - 0B	Small reel, thick tape	T-20
0A - 16	C cassette, thin tape	TC-30
0A - 16	C cassette, thin tape	TC-40
0D - 0F	Small reel, thick tape	T-40
11 - 14	Small reel, thick tape	T-60
15 - 18	Small reel, thick tape	T-80 / DF-160
17 - 1A	Small reel, thick tape	T-90 / DF-180
19 - 1D	Small reel, thick tape	T-100
1D - 21	Small reel, thick tape	T-120 / DF-240
1E - 1F	Small reel, thin tape	T-140
1F - 23	Small reel, thick tape	T-130
21 - 23	Small reel, thin tape	T-160
21 - 23	Small reel, thin tape	T-168
22 - 24	Small reel, thick tape	DF-300
22 - 24	Small reel, thin tape	T-180 / DF-360
22 - 24	Small reel, thin tape	T-210 / DF-420
22 - 23	Large reel	T-5
23 - 24	Large reel	T-10
25 - 26	Large reel	T-20
27 - 29	Large reel	T-30
29 - 2B	Large reel	T-40
2D - 2F	Large reel	T-60

Note:
- **The values of cassette tape type <2> in the above table are typical values with representative cassette tapes.**

1.8 Servicing the video navigation function

The video navigation function built into this unit works by storing the video navigation data in the internal Flash memory and writing data in the cassette tape simultaneously.
Therefore, the Flash memory and the cassette tape (self- recorded tape) form a related pair. If the Flash memory or the board assembly (in which the Flash memory is included) is replaced, the video navigation function will not operate. In this case, it is required to copy the video navigation data in the original Flash memory into the Flash memory of the unit which the navigation function is available.

1.8.1 Copying the video navigation data

Notes:

- **When copying the video navigation data, initialization of the Flash memory of the master unit is required.**
- **Connect the JLIP cable to each "JLIP terminal" of the VCR.**
  JLIP Cable (Parts No. : QAM0129-001 or PEAC0453)

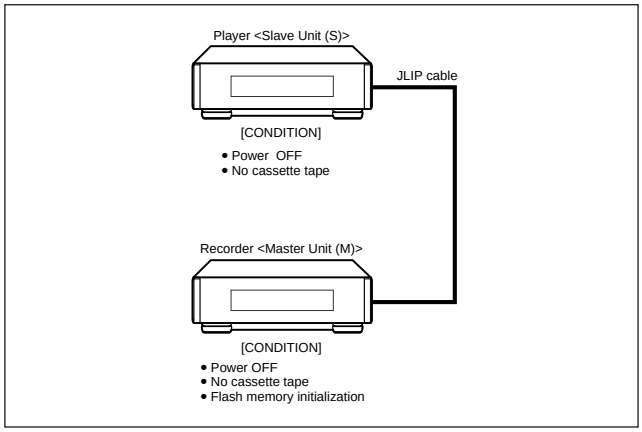


Fig. 1-8-1a Connection diagram

(1) Set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).
(2) Turn off the power of the 2 units (slave and master) VCR and set it without a cassette tape.
(3) Press the "PLAY" button of the slave unit for 7 seconds. When the copy mode is set, "1" will be displayed on the FDP. (To cancel the copy mode, press the "PLAY" button of the slave unit.)

FDP : 1 (S)

(4) Press the "PAUSE" button of the master unit for 7 seconds. When the copy mode is set, "2" will be displayed on the FDP. (To cancel the copy mode, press the "PAUSE" button of the master unit.)

FDP : 2 (M)

(5) Press the "STOP" button of the master unit.
When copying is started,"3" will be displayed on the FDP and when copying is completed the FDP display changes from "3" to "4" .
When an error occurs during the copying process, "5" will be displayed on the FDP. During such an occurrence the slave unit FDP display is "1" .

FDP : 1 (S)

FDP : 3 (M)
<Completed>
FDP : 4 (M)
<Error>
FDP : 5 (M)

(6) Press the"STOP" button of the master unit.
The copy mode of the master and slave unit will be cancelled simultaneously.

1.8.2 Erasing the video navigation data (Initialization)

This is the service mode to erase all the video navigation data inside the Flash memory. When a unit is replaced or after an operations check, erase the data which is not required while observing the TV screen.

Notes:

- **During Flash memory initialization, the transmission of the Jig code may affect the peripheral VCR. Therefore, when initializing the Flash memory, be sure to unplug the peripheral VCR power cable.**
- **Please take note that after erasing data cannot be restored, therefore care must be exercised.**
- **When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).**

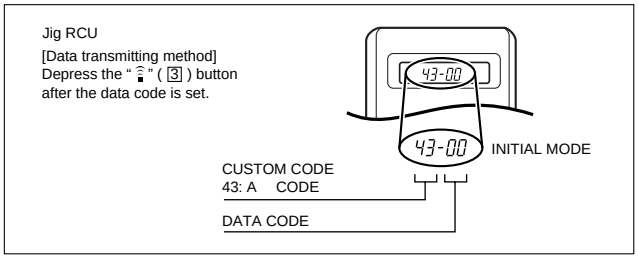


Fig. 1-8-2a Jig RCU [PTU94023B]

(1) Turn on the power.
(2) Transmit the code “FC” from the Jig RCU.
Then the “Flash memory utilities” screen is displayed. (See Fig. 1-8-2c.)
(3) Transmit the code “21” from the Jig RCU.
Select “1.Erase” then erase starts. During erase “Please wait” is displayed and when erase is completed “Erased” will be displayed. (See Fig. 1-8-2d and Fig. 1-8-2e.)
(4) Transmit the code “23” from the Jig RCU, then the mode is cancelled. (See Fig. 1-8-2b.)

Fig. 1-8-2b

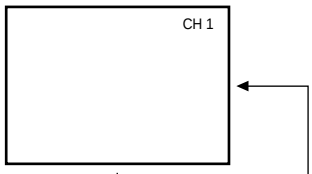


Fig. 1-8-2c

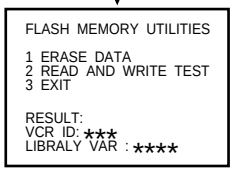


Fig. 1-8-2d

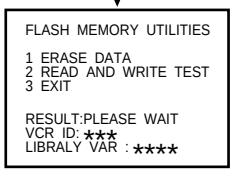
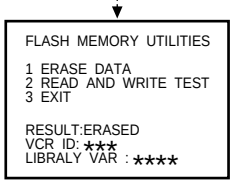


Fig. 1-8-2e



1.8.3 Factory setting level during shipment

After shipment from the factory, this is the service mode to return the rewritten EEPROM data to the factory setting level (Factory reset).

Note:

- **When this operation is executed, all user's setting contents will return to the factory setting level, therefore care must be exercised.**

(1) Insert a cassette tape.
(2) Transmit the code “6F” from the Jig RCU.
(3) After a setting is completed, the cassette tape is automatically ejected.

SECTION 2
MECHANISM ADJUSTMENT

2.1 Before starting repair and adjustment

2.1.1 Precautions

(1) Unplug the power cord plug of the VCR before using your soldering iron.
(2) Take care not to cause any damage to the conductor wires when plugging and unplugging the connectors.
(3) Do not randomly handle the parts without identifying where the trouble is.
(4) Exercise enough care not to damage the lugs, etc. during the repair work.
(5) When reattaching the front panel assembly, make sure that the door opener of the cassette holder assembly is lowered in position prior to the reinstallation. (See SECTION 1 DISASSEMBLY.)
(6) When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DISASSEMBLY.)

2.1.2 Checking for proper mechanical operations

Enter the mechanism service mode when you want to operate the mechanism when no cassette is loaded. (See SECTION 1 DISASSEMBLY.)

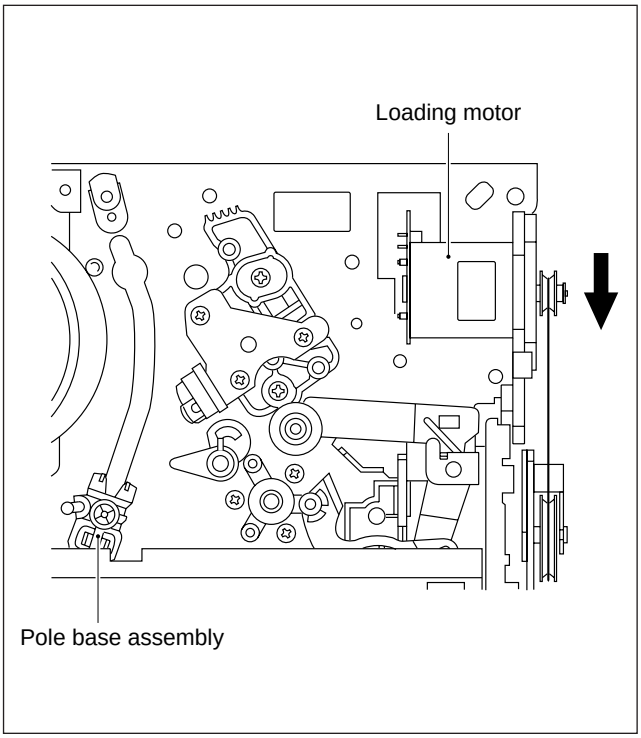


Fig. 2-1-3a

2.1.3 Manually removing the cassette tape

1. In case of electrical failures

If you cannot remove the cassette tape which is loaded because of any electrical failure, manually remove it by taking the following steps.

(1) Unplug the power cord plug from the power outlet.
(2) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the drum assembly.
(3) Unload the pole base assembly by manually turning the loading motor of the mechanism assembly toward the front. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig.2-1-3a.)
(4) Bring the pole base assembly to a pause when it reaches the position where it is hidden behind the cassette tape.
(5) Move the top guide toward the drum while holding down the lug (A) of the bracket retaining the top guide. Likewise hold part (B) down and remove the top guide.
Section (C) of the top guide is then brought under the cassette lid. Then remove the top guide by pressing the whole cassette tape down. (See Fig.2-1-3b.)
(6) Remove the cassette tape by holding both the slackened tape and the cassette lid.
(7) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

Note:

- ***For the disassembly procedure of the major parts and details of the precautions to be taken, see "SECTION 1 DISASSEMBLY".***

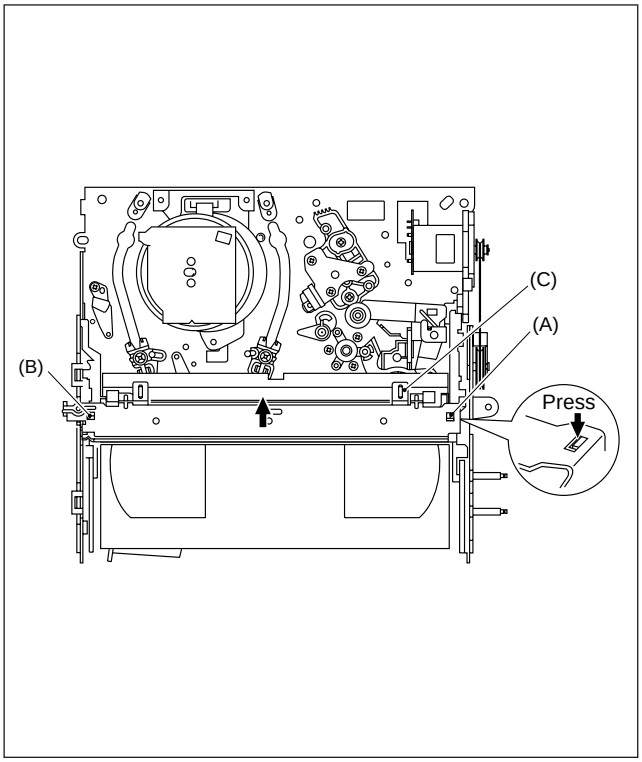


Fig. 2-1-3b

2. In case of mechanical failure

If you cannot remove the cassette tape which is loaded because of any mechanical failure, manually remove it by taking the following steps.

(1) Unplug the power cable and remove the top cover, front panel assembly and others so that the mechanism assembly is visible. (See SECTION 1 DISASSEMBLY.)
(2) While keeping the tension arm assembly of the mechanism assembly free from tension, pull the tape on the pole base assembly (supply or take-up side) out of the guide roller. (See Fig.2-1-3c.)
(3) Take the spring of the pinch roller arm assembly off the hook of the press lever assembly, and detach it from the tape. (See Fig.2-1-3d.)
(4) In the same way as in the electrical failure instructions in 2.1.3-1(5), remove the top guide.
(5) Raise the cassette tape cover. By keeping it in that position, draw out the cassette tape case from the cassette holder and take out the tape.
(6) By hanging the pinch roller arm assembly spring back on the hook, take up the slack of the tape into the cassette.

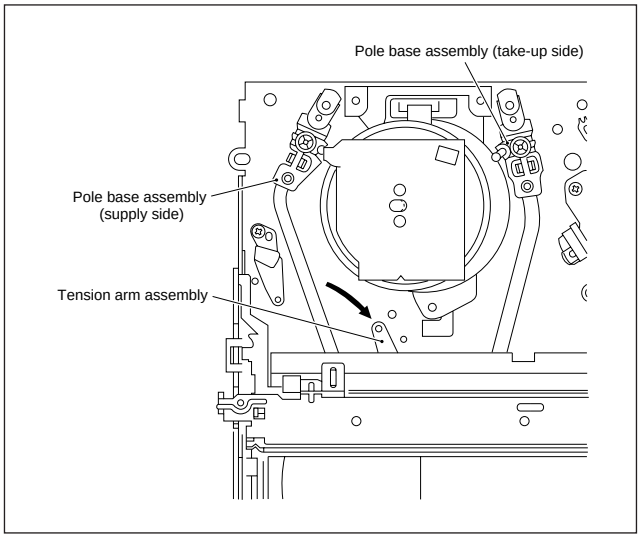


Fig. 2-1-3c

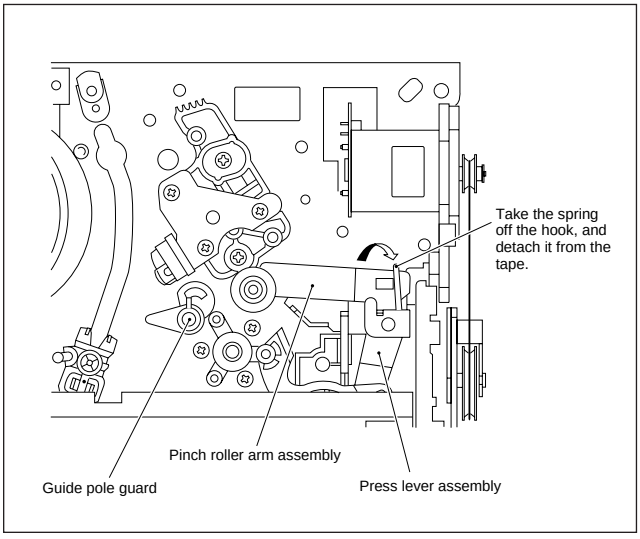
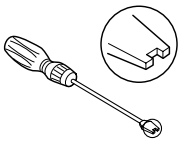
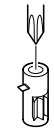
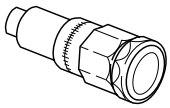
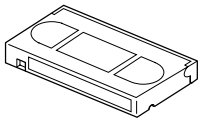
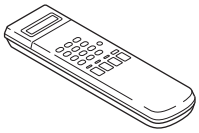
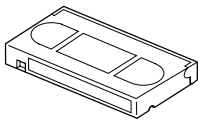
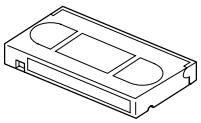


Fig. 2-1-3d

2.1.4 Jigs and tools required for adjustment

Roller driver PTU94002	A/C head positioning tool PTU94010	Torque gauge PUJ48075-2
		
Back tension cassette gauge PUJ48076-2	Jig RCU PTU94023B	
		
Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L	
		

2.1.5 Maintenance and inspection

1. Location of major mechanical parts

In this chapter, the two mechanism speeds are described by comparing the speeds of the standard type and the high-speed FF/REW type.
It is possible to distinguish between these two types of mechanism by the diameters of their capstan pulleys.
The capstan pulley diameter for the standard type is approx. 32 mm.
The capstan pulley diameter for the high-speed FF/REW type is approx. 43 mm.
For information on the different parts used in the two mechanism types, please refer to the “Replacement of major parts”.

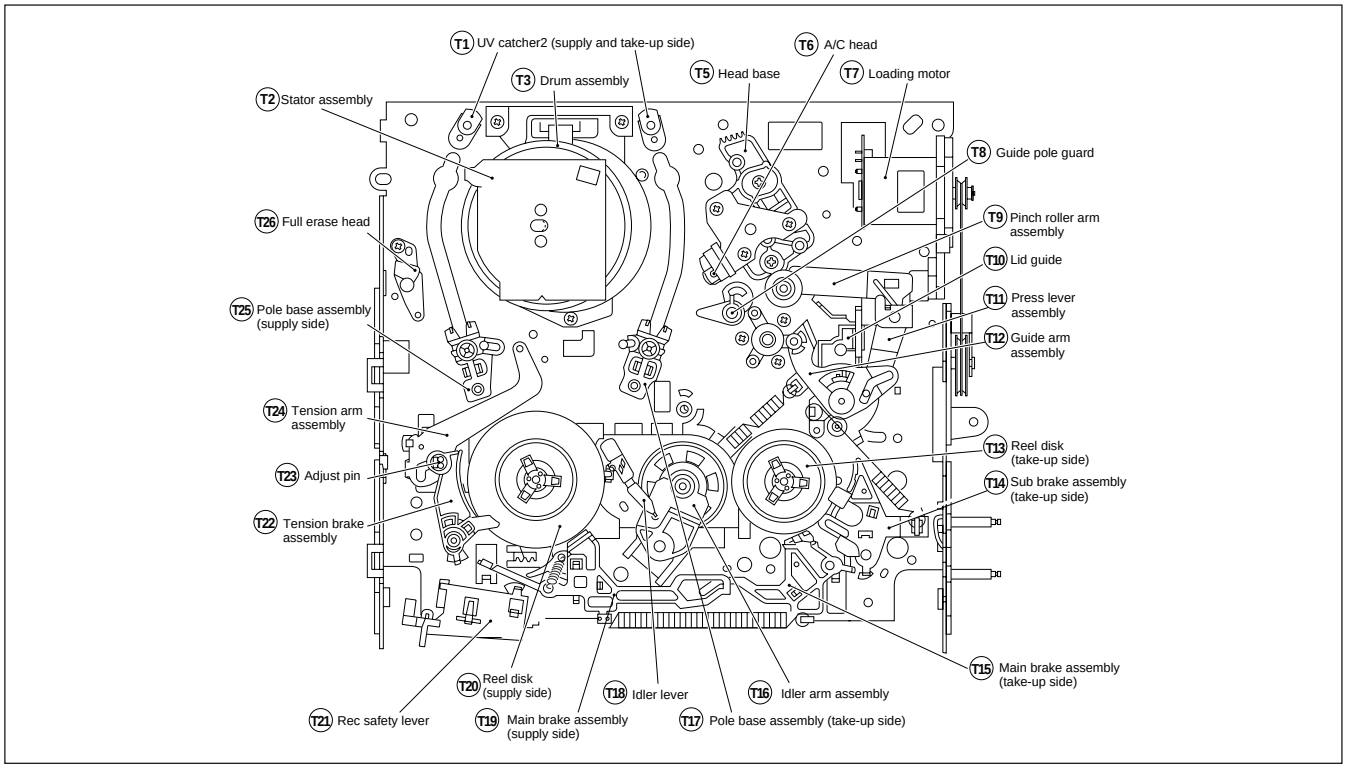

T1 UV catcher2 (supply and take-up side)
T6 A/C head
T3 Drum assembly
T5 Head base
T7 Loading motor
T2 Stator assembly
T8 Guide pole guard
T26 Full erase head
T9 Pinch roller arm assembly
T10 Lid guide
T25 Pole base assembly (supply side)
T11 Press lever assembly
T12 Guide arm assembly
T24 Tension arm assembly
T13 Reel disk (take-up side)
T23 Adjust pin
T14 Sub brake assembly (take-up side)
T22 Tension brake assembly
T15 Main brake assembly (take-up side)
T20 Reel disk (supply side)
T18 Idler lever
T16 Idler arm assembly
T21 Rec safety lever
T19 Main brake assembly (supply side)
T17 Pole base assembly (take-up side)

Fig. 2-1-5a Mechanism assembly top side

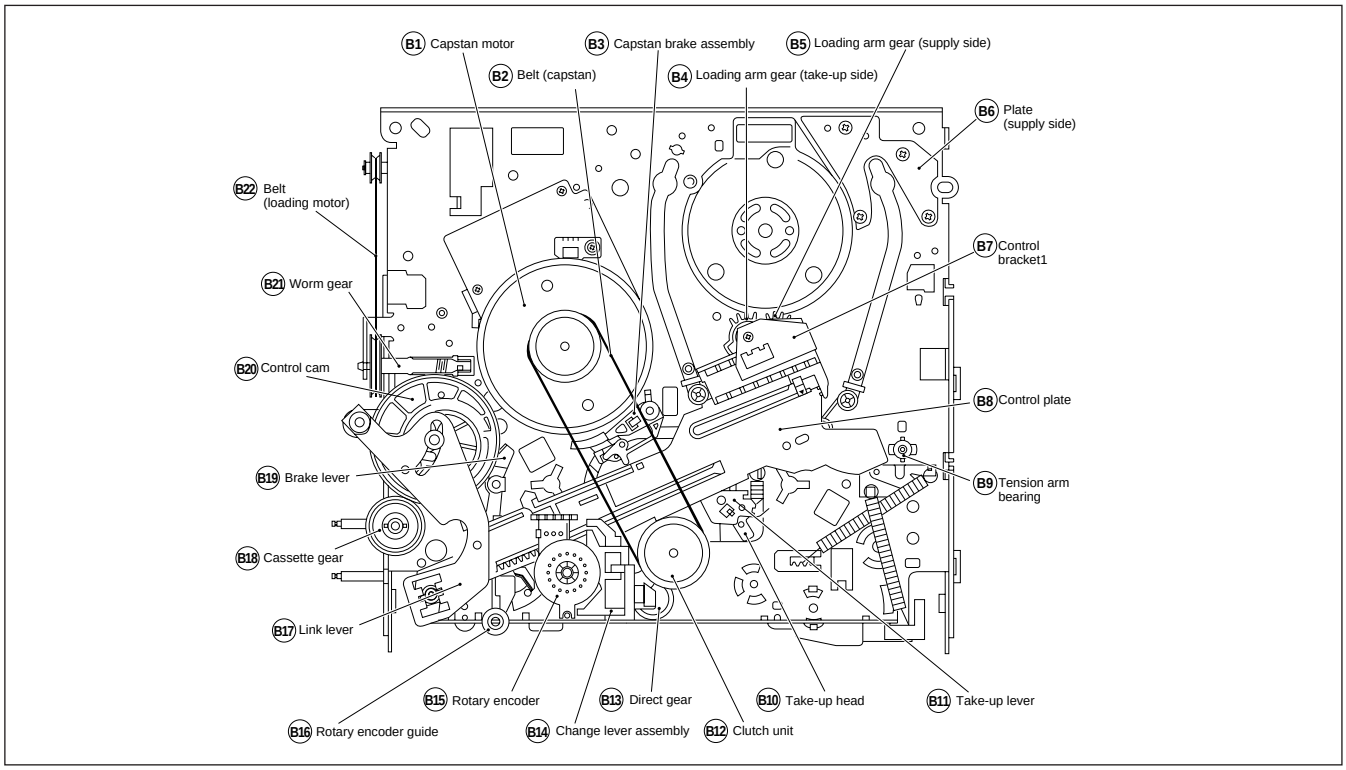


Fig. 2-1-5b Mechanism assembly bottom side

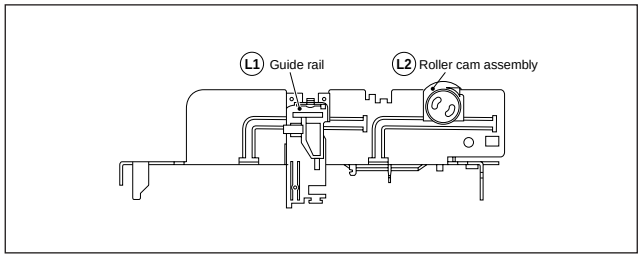


Fig. 2-1-5c Mechanism assembly left side

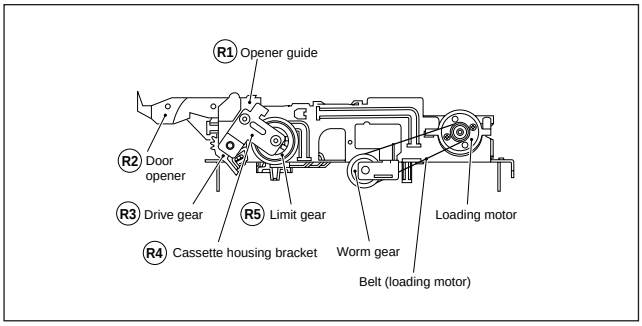


Fig. 2-1-5d Mechanism assembly right side

2. Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.

When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

(1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth or Kimu-wipe with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.

Note:

- ***Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.***

(2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.

(3) After cleaning, make sure that the cleaned parts are completely dry before using the video tape.

3. Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- ***See the "mechanism assembly" diagram of the parts list for the lubricating or greasing spots, and for the types of oil or grease to be used.***

4. Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning,lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions.However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time,even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Capstan motor (Shaft)	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Capstan brake assembly		○
	Main brake assembly		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Clutch unit		○
	Worm gear		○
	Control plate		○
Other	Brush	★○	★○
	Tension brake assembly	○	○
	Rotary encoder		○

★ : Cleaning

○ : Inspection or replacement if necessary

Table 2-1-5a

5. Disassembling procedure table

The following table indicates the order in which parts are removed for replacement. To replace parts, remove them in the order of 1 to 18 as shown in the table. To install them, reverse the removal sequence.

The symbols and numbers preceding the individual part names represent the numbers in the "Location of major mechanical parts" table. Also, the "T", "B", and "T/B" on the right of each part name shows that the particular part is removed from the front, from the back, and from both sides of the mechanism, respectively.

Symbols and numbers	Removal parts / (Reference items) Replacement parts	Front (T)/Back (B) of mechanism	Number of removal steps	L1 Guide rail	L2 Roller cam assembly	R4 Cassette housing bracket	R1 Opener guide	— Relay gear	— Cassette holder assembly	R3 Drive gear	— Drive arm	T9 Pinch roller arm assembly	T12 Guide arm assembly	T11 Press lever assembly	T1 UV catcher2	B15 Rotary encoder	B12 Clutch unit	B14 Change lever assembly	B13 Direct gear	— Coupling gear	B17 Link lever	B21 Worm gear	B7 Control bracket1	B8 Control plate	B5 Loading arm gear (supply side)	B4 Loading arm gear (take-up side)	B11 Take-up lever	T14 Sub brake assembly (take-up side)	T15 Main brake assembly (take-up side)	T13 Reel disk (take-up side)	T22 Tension brake assembly	T24 Tension arm assembly	T18 Idler lever	B19 Brake lever (*1)
L1	2.2.3 Guide rail	T	1																															
L2	2.2.3 Roller cam assembly	T	1																															
R4	2.2.3 Cassette housing bracket	T	1																															
R1	2.2.3 Opener guide	T	2			1																												
R2	2.2.3 Door opener	T	3			1	2																											
—	2.2.3 Relay gear	T	3			1	2																											
R5	2.2.3 Limit gear	T	3			1	2																											
—	2.2.3 Cassette holder assembly	T	6	1	2	3	4	5																										
R3	2.2.3 Drive gear	T	4			1	2	3																										
—	2.2.3 Drive arm	T	8	1	2	3	4	5	6	7																								
T9	2.2.4 Pinch roller arm assembly	T	1																															
T12	2.2.5 Guide arm assembly	T	1																															
T11	2.2.5 Press lever assembly	T	3									1	2																					
T6	2.2.6 A/C head	T	1																															
T7	2.2.7 Loading motor	T	1																															
B1	2.2.8 Capstan motor	T/B	1																															
T1	2.2.9 UV catcher2	T	1																															
T17	2.2.9 Pole base assembly (take-up side)	T/B	2												1																			
T25	2.2.9 Pole base assembly (supply side)	T/B	2												1																			
B15	2.2.10 Rotary encoder	B	1																															
B12	2.2.11 Clutch unit	B	1																															
B14	2.2.12 Change lever assembly	B	3													1	2																	
B13	2.2.12 Direct gear	B	4													1	2	3																
—	2.2.12 Coupling gear	B	5													1	2	3	4															
—	2.2.12 Clutch gear	B	6													1	2	3	4	5														
B17	2.2.13 Link lever	B	1																															
B18	2.2.14 Cassette gear	B	2																		1													
B20	2.2.14 Control cam	B	2																		1													
B21	2.2.14 Worm gear	B	1																															
T10	- Lid guide	T/B	5									1	2	3								4												
B7	2.2.15 Control bracket1	B	1																															
B8	2.2.15 Control plate	B	6													1	2	3			4		5											
B5	2.2.16 Loading arm gear (supply side)	B	7													1	2	3			4		5	6										
B4	2.2.16 Loading arm gear (take-up side)	B	8													1	2	3			4		5	6	7									
—	2.2.16 Loading arm gear shaft	B	9													1	2	3			4		5	6	7	8								
B11	2.2.17 Take-up lever	T/B	7													1	2	3			4		5	6										
B10	2.2.17 Take-up head	T/B	8													1	2	3			4		5	6			7							
—	2.2.17 Control plate guide	T/B	8													1	2	3			4		5	6			7							
B3	2.2.18 Capstan brake assembly	T/B	7													1	2	3			4		5	6										
T14	2.2.19 Sub brake assembly(take-up side)	T/B	15	1	2	3	4	5	6	7	8					9	10	11			12		13	14										
T15	2.2.20 Main brake assembly(take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15						
T19	2.2.20 Main brake assembly(supply side)	T/B	9	1	2	3	4	5	6	7	8																							
T13	2.2.20 Reel disk (take-up side)	T/B	16	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15						
T22	2.2.21 Tension brake assembly	T/B	9	1	2	3	4	5	6	7	8																							
T20	2.2.21 Reel disk (supply side)	T/B	10	1	2	3	4	5	6	7	8																					9		
T24	2.2.21 Tension arm assembly	T/B	10	1	2	3	4	5	6	7	8																					9		
B9	2.2.21 Tension arm bearing	T/B	10	1	2	3	4	5	6	7	8																					9		
T18	2.2.22 Idler lever	T/B	17	1	2	3	4	5	6	7	8					9	10	11			12		13	14								15	16	
T16	2.2.22 Idler arm assembly	T/B	18	1	2	3	4	5	6	7	8					9	10	11			12		13	14								15	16	17
B19	- Brake lever (*1)	T/B	18	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15	16	17				
B16	- Rotary encoder guide	T/B	19	1	2	3	4	5	6	7	8					9	10	11			12		13	14				15	16	17				18

Table 2-1-5b

Note:

- ***The parts with marked (*) have different types of mechanisms (standard type or high-speed FF/REW type).***
  - ***1: Uses the standard type mechanism only.***
  - ***2: Uses the high-speed FF/REW type mechanism only.***

2.2 Replacement of major parts

2.2.1 Before starting disassembling (Phase matching between mechanical parts)

The mechanism of this unit is closely linked with the rotary encoder and system controller circuits.
Since the system controller detects the status of mechanical operation in response to phases of the rotary encoder (internal switch positions), the mechanism may not operate properly unless such parts as the rotary encoder, control plate, loading arm gear, control cam, cassette gear, limit gear, relay gear and drive gear are installed in their correct positions.
Especially, this model is not provided with any cassette housing assembly, so that cassette loading and unloading must be accomplished by operation of the cassette holder assembly. The latter is in turn driven by such parts as the drive gear, relay gear and limit gear. Exercise enough care, therefore, to have the phases of all this gear matching one another. (For information on phase matching of the mechanism, see the instructions on how to install individual parts.)
This unit is provided with a mechanism assembly mode. It is therefore necessary to enter this mode for assembling and disassembling procedures.
This mode is usually not in use, manually set it when it is required.

2.2.2 How to set the “Mechanism assembling mode”

Remove the mechanism assembly and place it bottom side up. (See SECTION 1 DISASSEMBLY.) Turn the worm gear toward the front so that the guide hole of the control cam is brought into alignment with the hole at the mechanism assembly chassis. This position renders the mechanism assembling mode operational. Make sure that the control plate is located in alignment with the mark E. (See Fig.2-2-2a.)

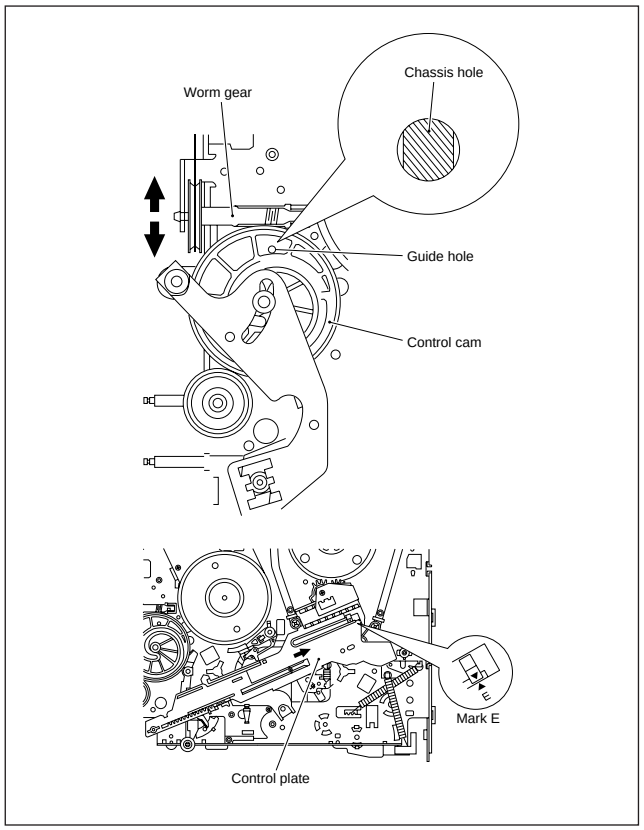


Fig. 2-2-2a

2.2.3 Cassette holder assembly

1. How to remove

(1) Remove the guide rail and roller cam assembly. (See Fig.2-2-3a.)
(3 lugs on the guide rail and one lug on the roller cam assembly)

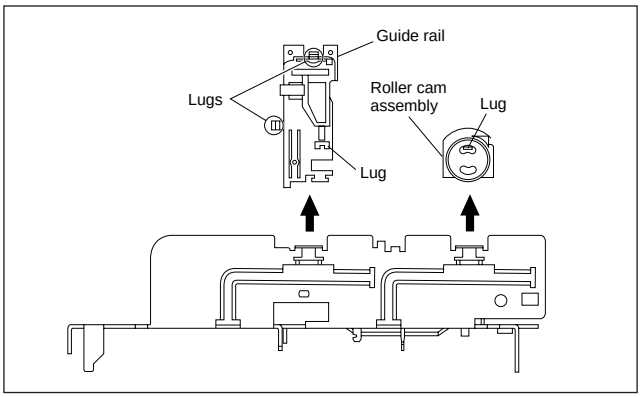


Fig. 2-2-3a

(2) Remove the two slit washers and remove the cassette housing bracket. (See Fig.2-2-3b.)
(3) Remove the opener guide, spring(A), door opener, relay gear and limit gear. (See Fig.2-2-3b.)

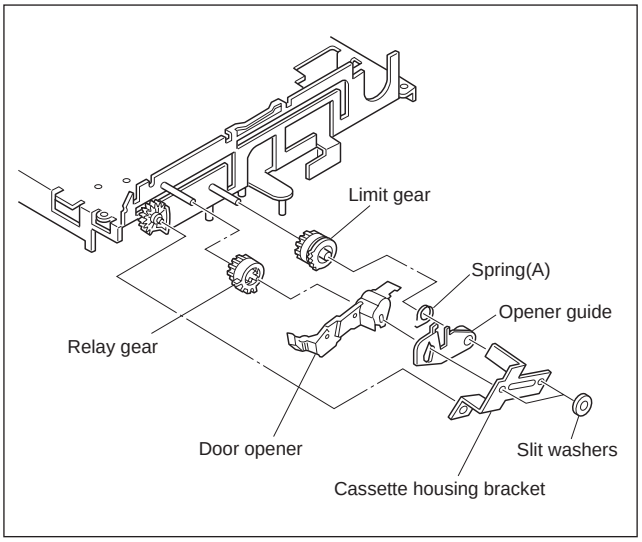


Fig. 2-2-3b

(4) While swinging the lock levers (R) and (L) of the cassette holder assembly toward the front, slide the cassette holder assembly until its legs come to where the guide rail and the roller cam assembly have been removed (so that the drive arm is upright). (See Fig.2-2-3c.)

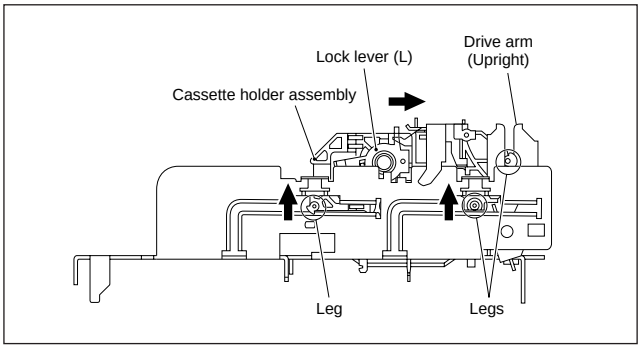


Fig. 2-2-3c

(5) While holding the left side of the cassette holder, lift the cassette holder assembly so that the three legs on the left side are all released. Then pull the legs (A) and (B) on the right side out of the rail and also pull up the leg(C). (See Fig.2-2-3d and Fig.2-2-3e.)
(6) Draw out the drive gear, and remove the drive arm.

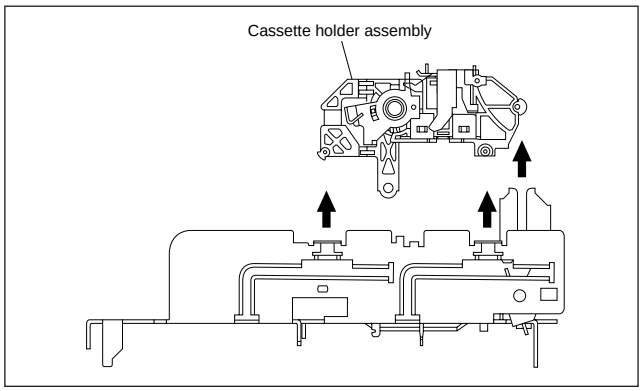


Fig. 2-2-3d

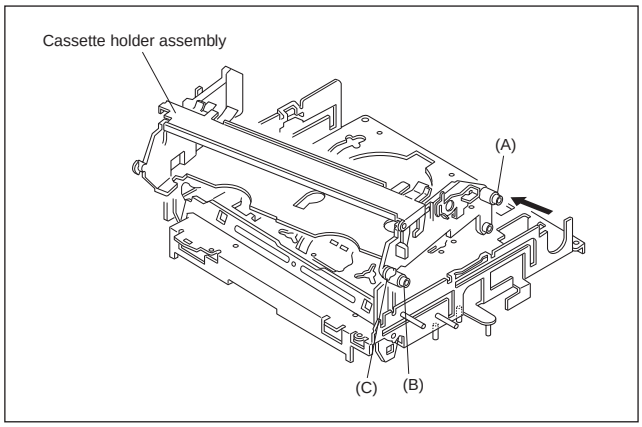


Fig. 2-2-3e

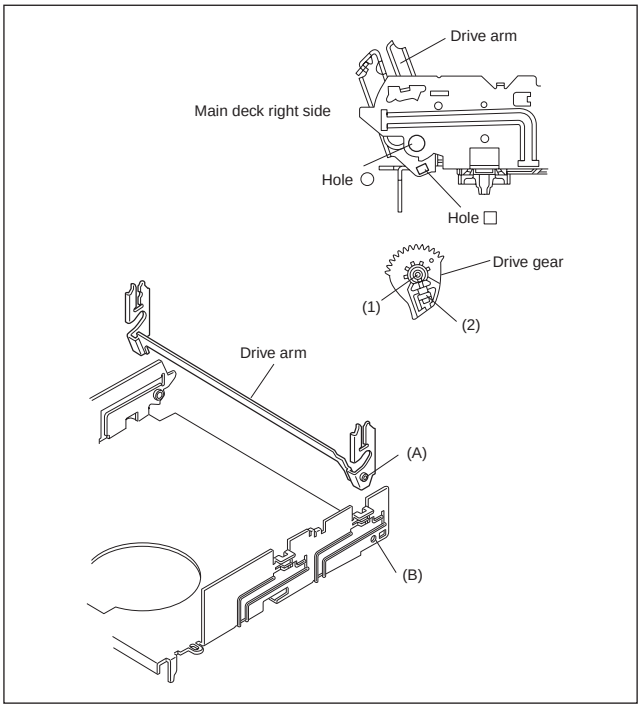


Fig. 2-2-3f

2. How to install (Phase matching)

(1) Insert the section (A) of the drive arm into the section (B) of the main deck.
(2) Insert the section (1) of the drive gear into the round hole, and the section (2) into the square hole on the drive arm. (See Fig.2-2-3f.)
(3) Hold the drive arm upright and fit the leg (C) on the right side of the cassette holder assembly into the groove. (See Fig.2-2-3g.)
(4) While swinging the lock lever (R) of the cassette holder assembly toward the front, put the legs (A) and (B) into the rail. (See Fig.2-2-3g.)
(5) Drop the three legs on the left side of the cassette holder assembly into the groove at one time. (See Fig.2-2-3h.)
(6) Slide the whole cassette holder assembly toward the front to bring it to the eject end position.
(7) Install the limit gear so that the notch on the outer circumference of the limit gear is brought into alignment with the guide hole on the main deck. (See Fig.2-2-3i.)
(8) Install so that the notch on the periphery of the relay gear is aligned with the notch of the main deck and that hole A of the relay gear is aligned with the hole A of the limit gear and that hole B of the relay gear is aligned with the hole B of the drive gear. (See Fig.2-2-3i.)
(9) Install the door opener, opener guide, spring(A) and cassette housing bracket and fasten the two slit washers.

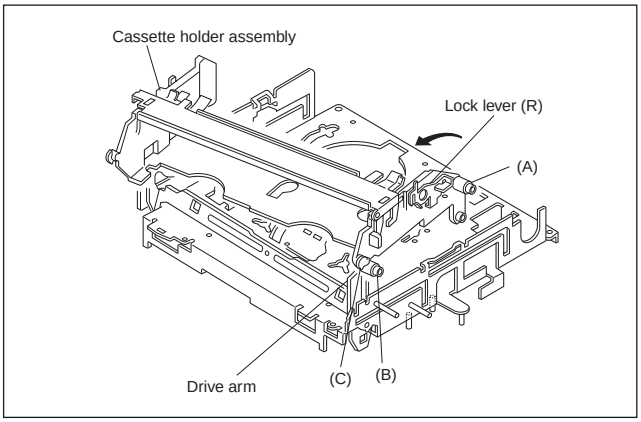


Fig. 2-2-3g

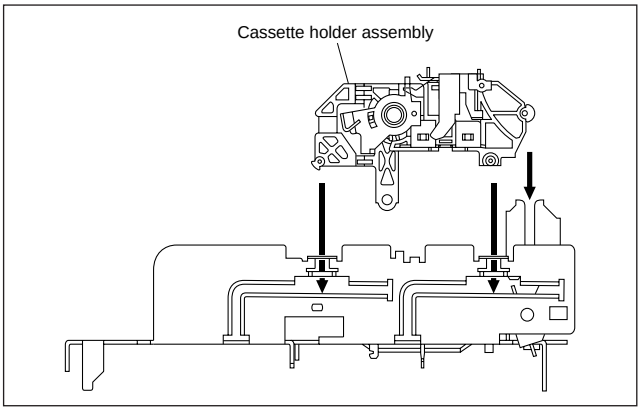


Fig. 2-2-3h

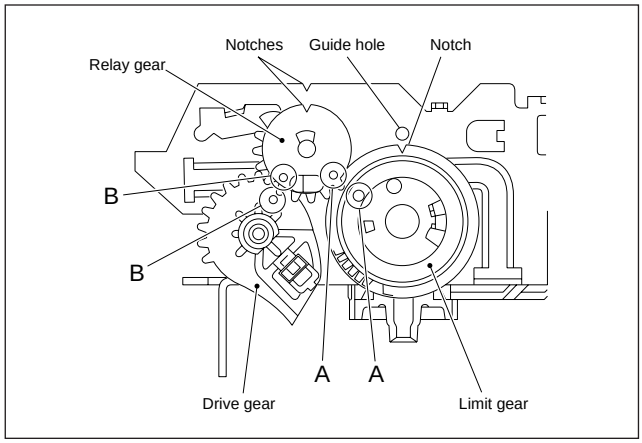


Fig. 2-2-3i

2.2.4 Pinch roller arm assembly

1. How to remove

(1) Remove the spring from the hook of the press lever assembly.
(2) Remove the slit washer and remove the pinch roller seat 2. (See Fig.2-2-4a.)
(3) Remove the pinch roller arm assembly by pulling it up.

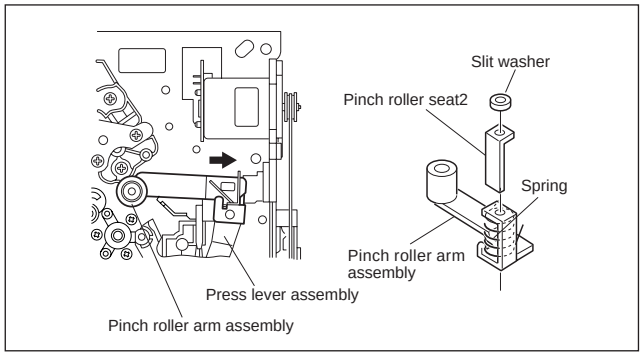


Fig. 2-2-4a

2.2.5 Guide arm assembly and press lever assembly

1. How to remove

(1) Remove the spring and expand the lug of the lid guide in the arrow-indicated direction. Then remove the guide arm assembly by pulling it up.
(2) Remove the press lever assembly by pulling it up. (See Fig.2-2-5a.)

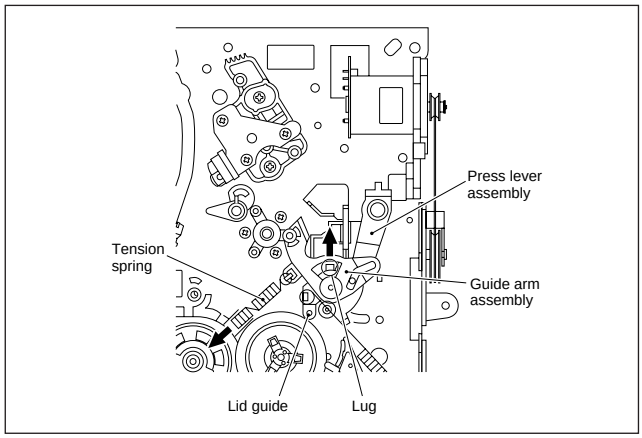


Fig. 2-2-5a

2.2.6 A/C head

1. How to remove

(1) Remove the two screws (A) and remove the A/C head together with the head base.
(2) When replacing only the A/C head, remove the three screws (B) while controlling the compression spring.

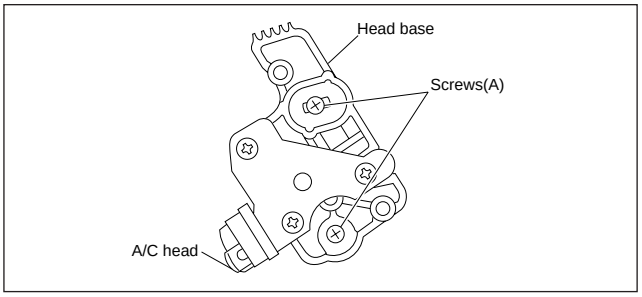


Fig. 2-2-6a

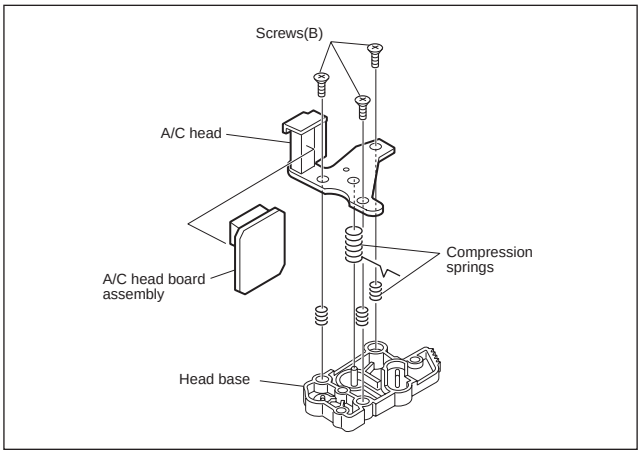


Fig. 2-2-6b

2. How to install

(1) To make the post-installation adjustment easier, set the temporary level as indicated in Fig.2-2-6c. Also make sure that the screw center (centre) is brought into alignment with the center (centre) position of the slot.

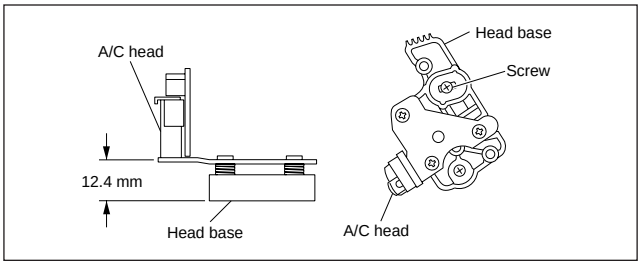


Fig. 2-2-6c

2.2.7 Loading motor

1. How to remove

(1) Remove the belt wound around the worm gear.
(2) Open the two lugs of the motor guide and remove the loading motor, loading motor board assembly and motor guide altogether by pulling them up.
(3) When replacing the loading motor board assembly, take care with the orientation of the loading motor. (Install so that the loading motor label faces upward.)
(4) When the motor pulley has been replaced, choose the fitting dimension as indicated in Fig.2-2-7a.

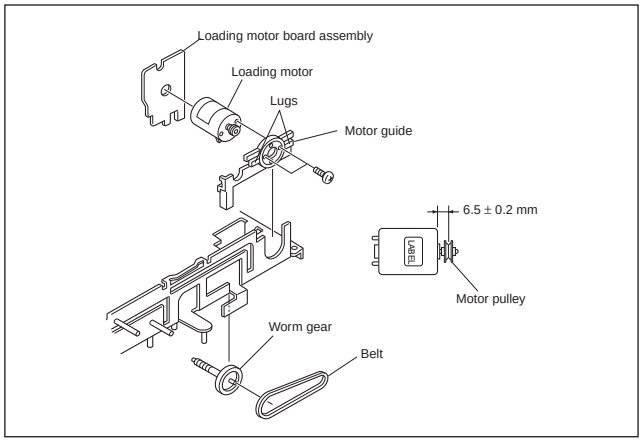


Fig. 2-2-7a

2.2.8 Capstan motor

1. How to remove

(1) Remove the belt (capstan) on the mechanism assembly back side.
(2) Remove the three screws (A) and remove the capstan motor.

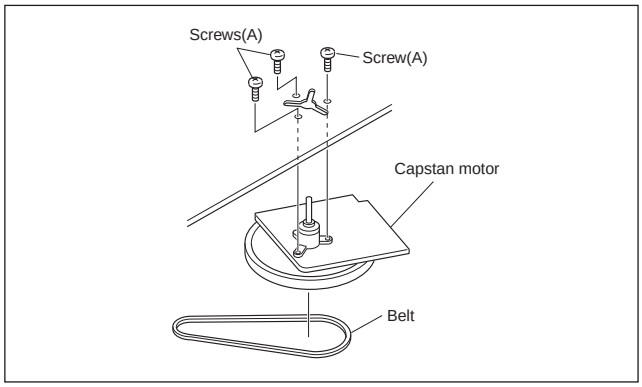


Fig. 2-2-8a

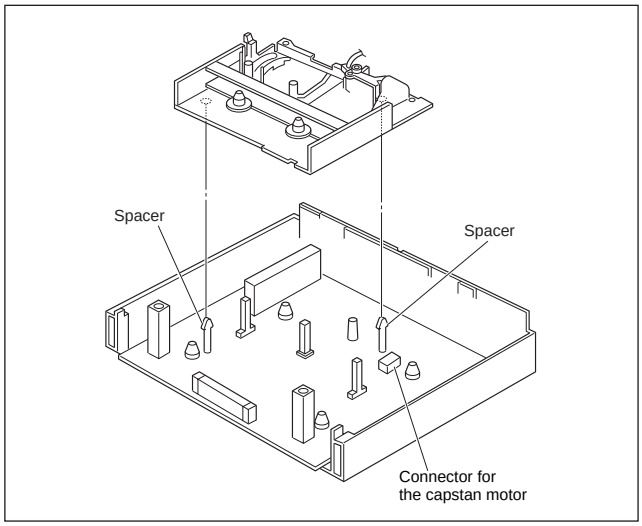


Fig. 2-2-8b

2. How to install (Centering the mounting position)

When the capstan motor has once been removed and then reinstalled out of the initial correct position in the rotational direction, the capstan motor current may be unstable during operation in high or low temperatures. This may result in greater Wow & Flutter and occasionally in power breakdown because of current over - load. Install the capstan motor while following the procedure given below.
(The capstan motor is centrally located when the unit is shipped from the factory.)

(1) Provisionally tighten the three screws (A) securing the capstan motor.
(2) Install the mechanism assembly to which the capstan motor is provisionally fastened on the bottom chassis which incorporates the Main board assembly. (No need to tighten the screws for mounting the mechanism.)
Make sure that all the connectors for the mechanism assembly and the Main board assembly are correctly installed as indicated in Fig. 2-2-8b.
(3) Making sure that the connector for the capstan motor is correctly mounted, and securely tighten the three screws (A).

Note:

- ***When the capstan motor has been replaced with a new one, perform recording in the EP(or LP) mode for at least 2 minutes at normal temperatures immediately before starting the FF/REW or SEARCH operations (Aging).***

2.2.9 Pole base assembly (supply or take-up side)

1. How to remove

(1) Remove the UV catcher 2 on the removal side by loosening the screw (A).
(2) Remove the pole base assembly on the supply side from the mechanism assembly by loosening the screw (B) on the mechanism assembly back side and sliding the pole base assembly toward the UV catcher 2.
(3) As for the pole base assembly on the take-up side, turn the pulley of the loading motor to lower the cassette holder because the screw (B) is hidden under the control plate. (See the “Procedures for Lowering the Cassette holder assembly” of 1.3 DISASSEMBLY/ASSEMBLY METHOD.) Further turn the motor pulley to move the cassette holder until the screw (B) is no longer under the control plate (in the half-loading position). Then remove it as done for the supply side by removing the screw (B).

Note:

- ***After reinstalling the Pole base assembly and the UV catcher2, be sure to perform compatibility adjustment.***

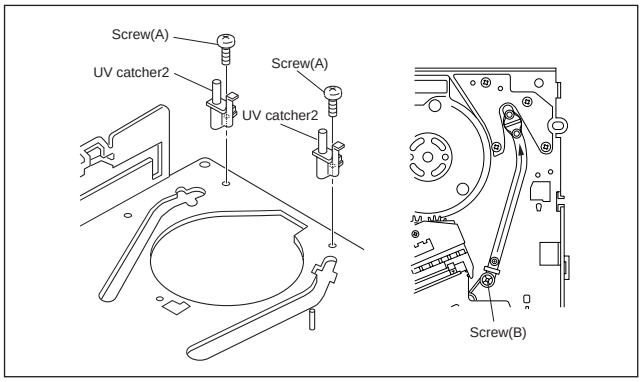


Fig. 2-2-9a

2.2.10 Rotary encoder

1. How to remove

(1) Remove the screw (A) and remove the rotary encoder by pulling it up. (See Fig. 2-2-10a.)

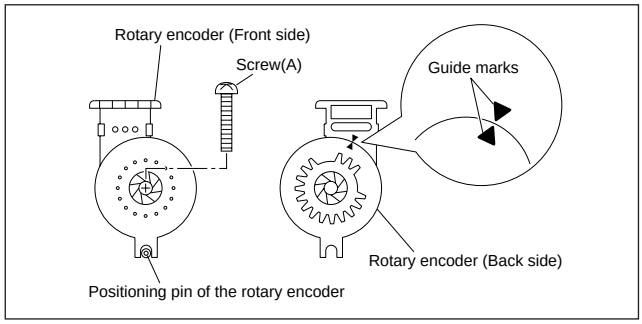


Fig. 2-2-10a

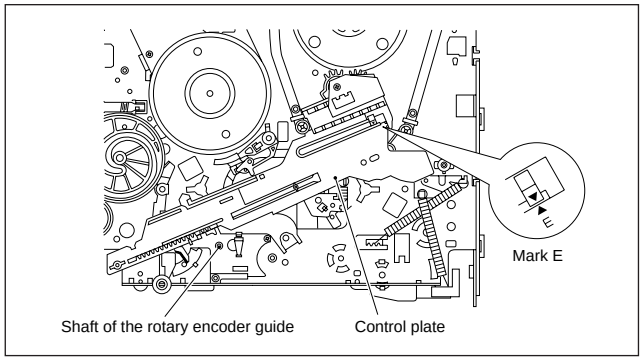


Fig. 2-2-10b

2. How to install (Phase matching)

(1) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft and bring the guide marks on the rotary encoder into alignment as indicated in Fig.2-2-10a. (See Fig. 2-2-10a and Fig. 2-2-10b.)

(2) Turn over the rotary encoder with its guide marks kept in alignment and install it by fitting on the shaft of the rotary encoder guide and the positioning pin.

(3) Tighten the screw (A) to complete the installation.

2.2.11 Clutch unit

(1) Remove the belt wound around the capstan motor and the clutch unit.

(2) Remove the slit washer and remove the clutch unit.

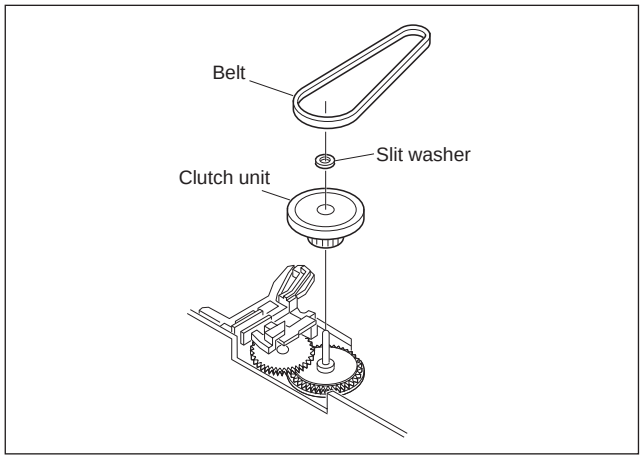


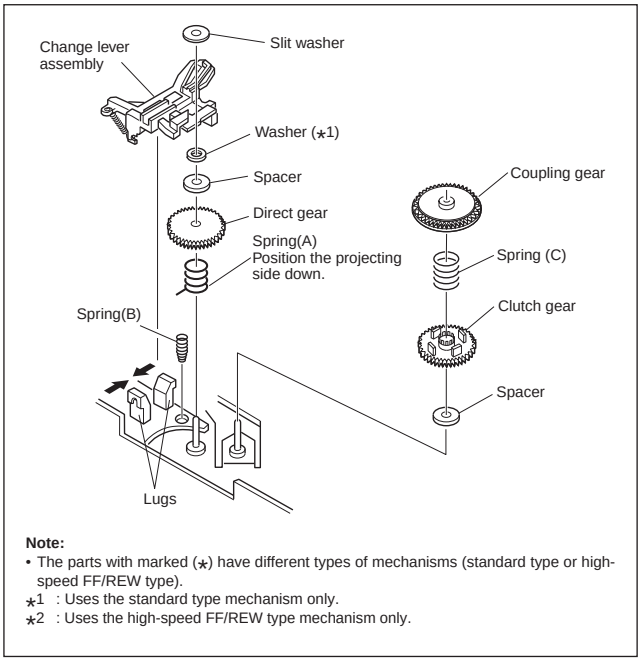
Fig. 2-2-11a

2.2.12 Change lever assembly, direct gear, clutch gear and coupling gear

1. How to remove

(1) Release the two lugs of the rotary encoder guide in the arrow-indicated direction and remove the change lever assembly.

(2) Remove the slit washer retaining the direct gear and remove the latter.
Take care so as not to lose the washer and spring. (See Fig.2-2-12a.)



Note:
- The parts with marked (*) have different types of mechanisms (standard type or high-speed FF/REW type).

*1 : Uses the standard type mechanism only.
*2 : Uses the high-speed FF/REW type mechanism only.

Fig. 2-2-12a

2. How to install

(1) Install the clutch gear, spring (A), spring (C), direct gear, spacer and others to the individual shafts of the main deck, and finally the slit washer. (See Fig.2-2-12a.)

(2) Let the spring (B) drops into the rotary encoder guide hole and install the change lever assembly.(Take care not to mistake a direction of the spring.) The point is to slightly lift the coupling gear and catch it from the both sides with the assembly. (See Fig.2-2-12b.)

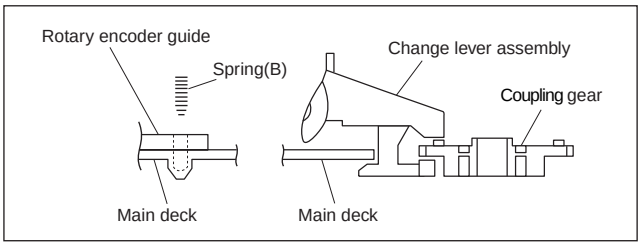


Fig. 2-2-12b

2.2.13 Link lever

1. How to remove

(1) Remove the two slit washers.
(2) Remove the link lever by lifting it from the shaft retained by the slit washers. Then swing the link lever counterclockwise and remove it from the locking section of the control plate.

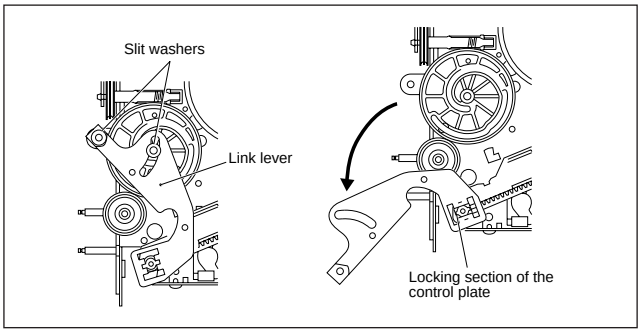


Fig. 2-2-13a

2. How to install (Phase matching)

(1) Slide the control plate so that its mark E is aligned with the mark ▼ on the loading arm gear shaft. (See Fig.2-2-13b.)
(2) Rotate the worm gear until the guide hole of the control cam is aligned exactly with the guide hole of the main deck. (See Fig.2-2-13c.)
(3) Insert the link lever into the locking section of the control plate. (See Fig.2-2-13a.)
(4) Rotate the link lever clockwise so that it is installed on the shafts in the center (centre) and on the left of the control cam.
(5) Fasten the slit washers at these two points.

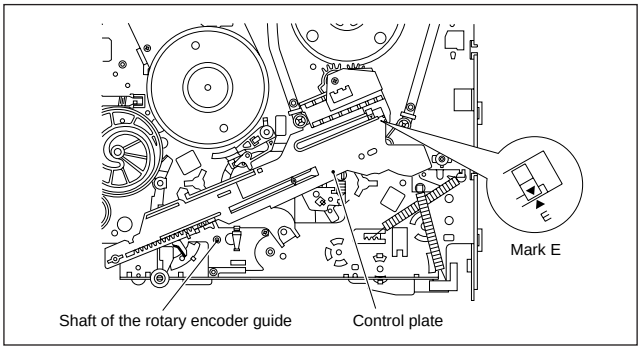


Fig. 2-2-13b

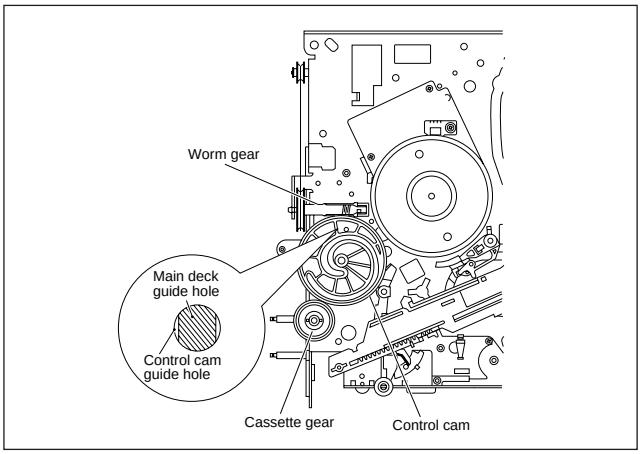


Fig. 2-2-13c

2.2.14 Cassette gear, control cam and worm gear

1. How to remove

(1) Remove the control cam by lifting it.
(2) Open the two lugs of the cassette gear outward and pull the latter off.
(3) Remove the belt wound around the worm gear and the loading motor.
(4) Open the lug of the lid guide outward and remove the worm gear.

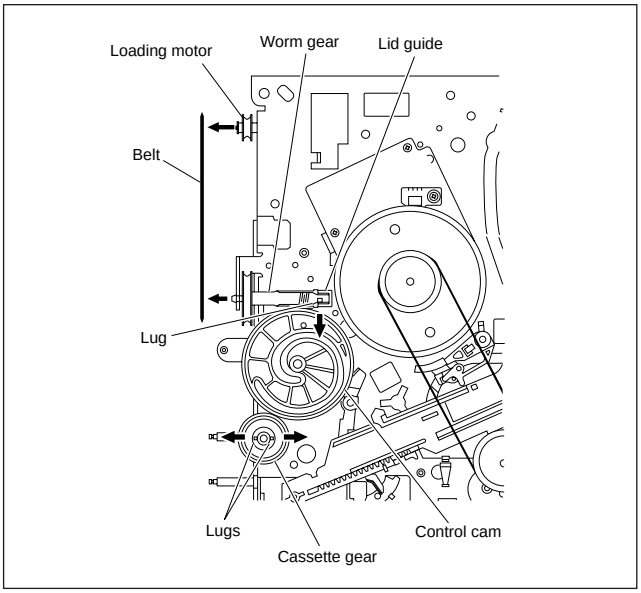


Fig. 2-2-14a

2.2.15 Control plate

1. How to remove

(1) Remove the screw (A) retaining the control bracket 1 and remove the latter.
(2) Slide the control plate as indicated by the arrow and remove the control plate. (See Fig.2-2-15a.)

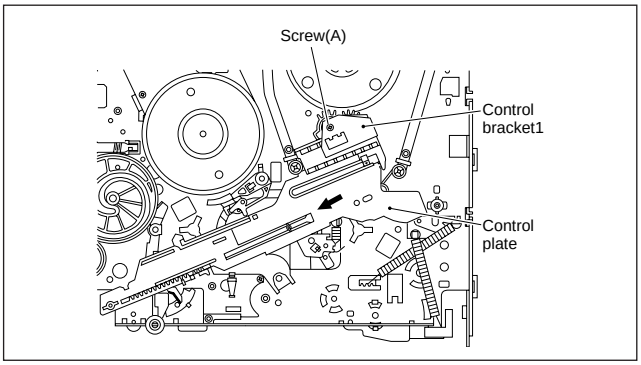


Fig. 2-2-15a

2. How to install (Phase matching)

(1) Adjust the position of the idler arm assembly pin as indicated in Fig.2-2-15b (to the left of center (centre) of the R section).
(2) Bring the guide hole of the take-up lever into alignment with the hole at the control plate guide and fix the position by inserting a 1.5 mm hexagonal wrench.

(3) Install the control plate so that the section A of the loading arm gear shaft fits into the hole (A) of the control plate, the section B of the control plate guide into the hole (B), and the control plate comes under the section C of the rotary encoder guide and the section D of the loading arm gear shaft while press-fit the pole base assmebly (supply side) as indicated by the arrow. It is important that the tension arm assembly shaft is positioned closer toward you than the control plate. (See Fig.2-2-15c.)
(4) Make sure that the mark E of the control plate is in alignment with the mark ▼ of the loading arm gear shaft. (See Fig.2-2-15c.)
(5) Pull off the hexagonal wrench for positioning.

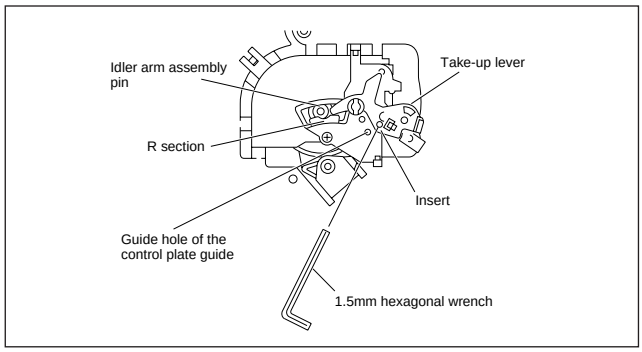


Fig. 2-2-15b

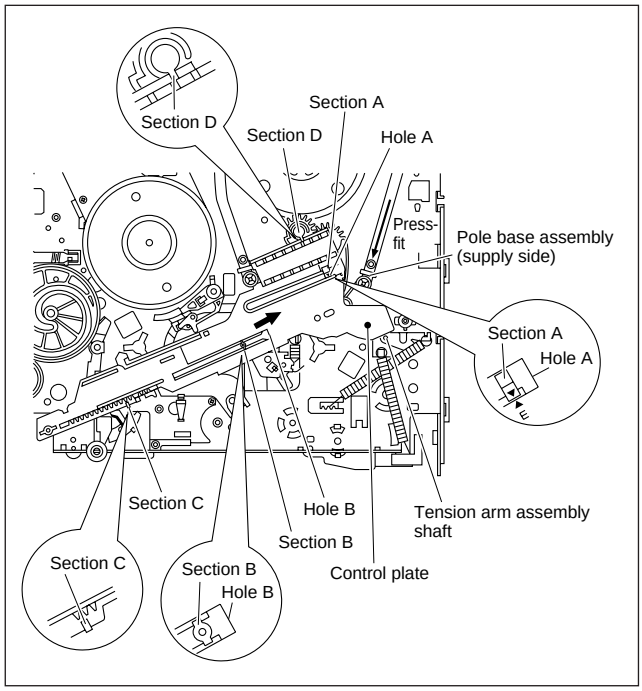


Fig. 2-2-15c

2.2.16 Loading arm gear (supply or take-up side) and loading arm gear shaft

1. How to remove

(1) Remove the loading arm gear (supply side) by loosening the screw (A). (See Fig. 2-2-16a.)
(2) Remove the screw (B) and remove the torsion arm from the pole base assembly (take-up side). (See Fig.2-2-16a.)
(3) Turn the loading arm gear (take-up side) clockwise so that the notch of the loading arm gear (take-up side) is in alignment with the projection of the loading arm gear shaft and lift it.
Likewise, turn the loading arm counterclockwise so that the notch is in alignment with the projection and remove the loading arm gear (take-up side). (See Fig.2-2-16a and Fig. 2-2-16b.)
(4) When removing the loading arm gear shaft, be sure of first removing the screw retaining the drum assembly (on the back side of the loading arm gear shaft). Then remove the screw (C) and remove the loading arm gear shaft by sliding it.

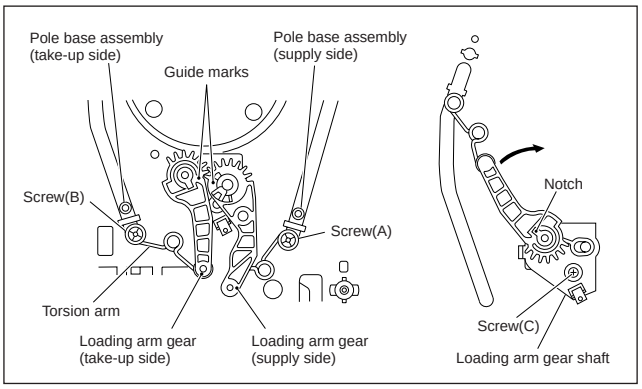


Fig. 2-2-16a

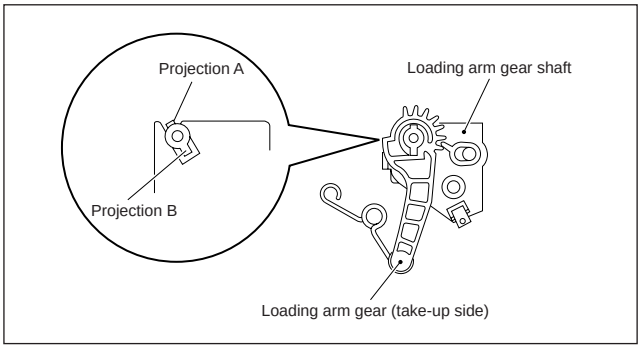


Fig. 2-2-16b

2. How to install

(1) Align the notch of the loading arm gear (take-up side) to the projection B of the loading arm gear shaft and slip it over. Then rotate it clockwise for alignment with the projection A and slip it down to the bottom. (See Fig.2-2-16b.)
(2) Then turn the loading arm gear (take-up side) counterclockwise. Hang the torsion arm on the pole base assembly (take-up side) and tighten the screw (B).
(3) Install the loading arm gear (supply side) so that the guide mark of the loading arm gear (take-up side) is in alignment with the guide mark of the loading arm gear (supply side). Then hang the torsion arm on the pole base assembly (supply side) and tighten the screw (A). (See Fig.2-2-16a.)

2.2.17 Take-up lever, take-up head and control plate guide

(1) Remove the spring of the take-up lever from the main deck.
(2) Remove the lug (A) of the take-up lever from the main deck and pull out the take-up lever and the take-up head together.
(3) Remove the screw (A).
(4) Align the idler arm assembly pin in the center (centre) of the R section of the control plate guide, remove the control plate guide lugs (B) and (C) from the main deck, and remove the control plate guide.

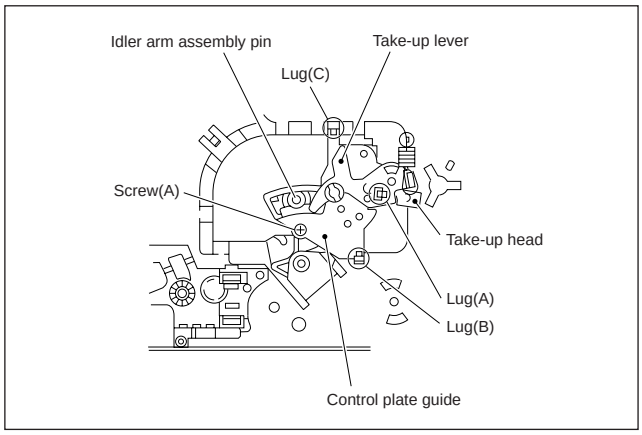


Fig. 2-2-17a

2.2.18 Capstan brake assembly

1. How to remove

(1) Move the lug (A) of the capstan brake assembly in the arrow-indicated direction so that it comes into alignment with the notch of the main deck. (See Fig. 2-2-18a.)
(2) Remove the lug (B) of the capstan brake assembly from the main deck and remove the capstan brake assembly.

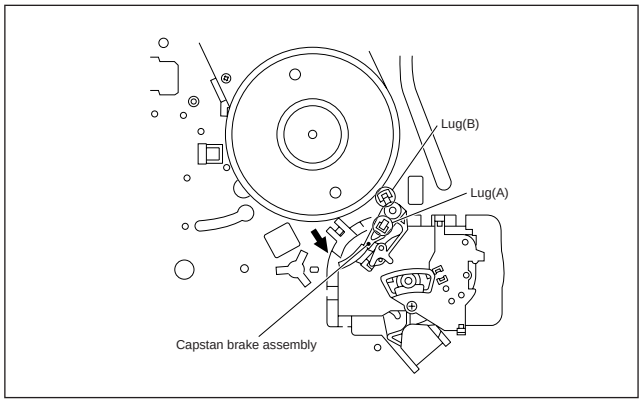


Fig. 2-2-18a

2.2.19 Sub brake assembly (take-up side)

1. How to remove

(1) Remove the spring attached to the lid guide and sub brake assembly (take-up side).
(2) Bring the lug (A) of the sub brake assembly (take-up side) into alignment with the notch of the main deck.
(3) Remove the lugs (B) and (C) of the sub brake assembly (take-up side) from the main deck and remove the sub brake assembly (take-up side).

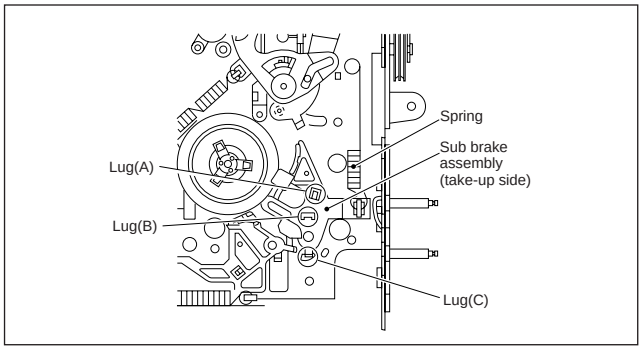


Fig. 2-2-19a

2.2.20 Main brake assembly (take-up side), reel disk (take-up side) and main brake assembly (supply side)

1. How to remove

(1) Move the main brake assembly (take-up side) in the arrow-indicated direction and remove the reel disk (take-up side).
(2) Remove the spring attached to the main brake assembly.
(3) Remove the lug (A) of the main brake assembly (take-up side) and pull out the lug (B) after bringing it into alignment with the main deck notch.
(4) Remove the lugs (C), (D) and (E) of the main brake assembly (supply side) from the main deck and pull them off. (See Fig.2-2-20a.)
(5) When installing the main brake assembly (take-up side), slide the brake lever in the direction as indicated by the arrow to prevent it from hitting the projection of the main brake assembly (take-up side). (See Fig.2-2-20b.)

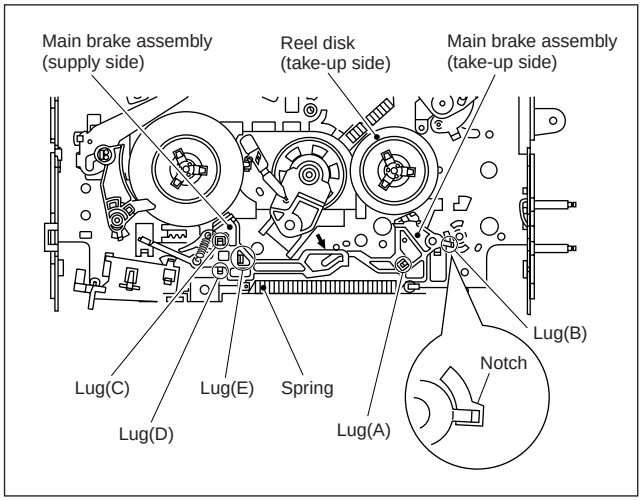
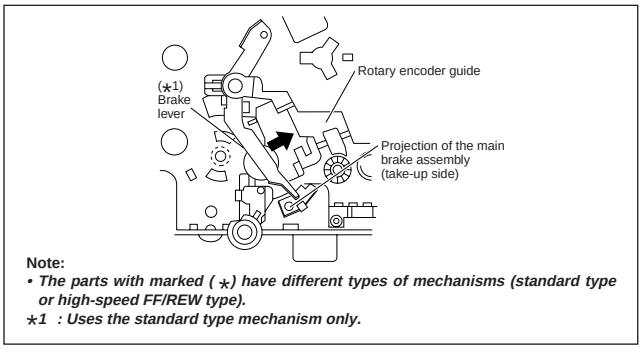


Fig. 2-2-20a



Note:
• The parts with marked (★) have different types of mechanisms (standard type or high-speed FF/REW type).
★1 : Uses the standard type mechanism only.

Fig. 2-2-20b

2.2.21 Tension brake assembly, reel disk (supply side) and tension arm assembly

1. How to remove

(1) Remove the three lugs of the tension brake assembly from the main deck and pull them off.
(2) Remove the reel disk (supply side) by loosening in the arrow-indicated direction the main brake assembly (supply side).
(3) Remove the tension spring on the back of the main deck. Then release the lug of the tension arm bearing in the arrow-indicated direction and draw out the tension arm assembly. (See Fig. 2-2-21a.)

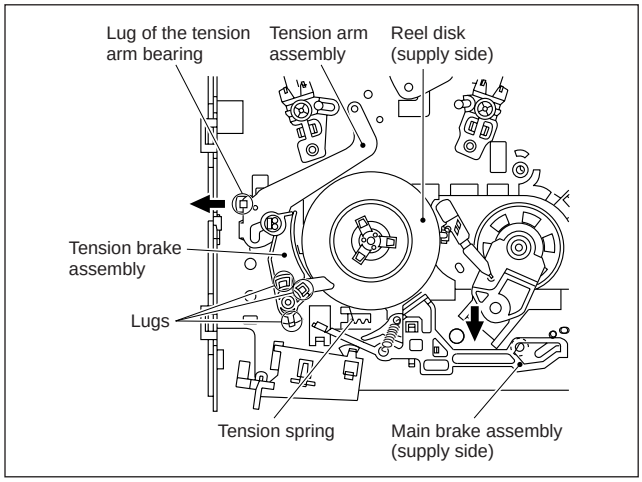


Fig. 2-2-21a

2.2.22 Idler lever, idler arm assembly

1. How to remove

(1) Remove the lug of the idler lever from the main deck and remove the hook fitted in the idler arm assembly hole by lifting it.
(2) Remove the slit washer and pull out the idler arm assembly.

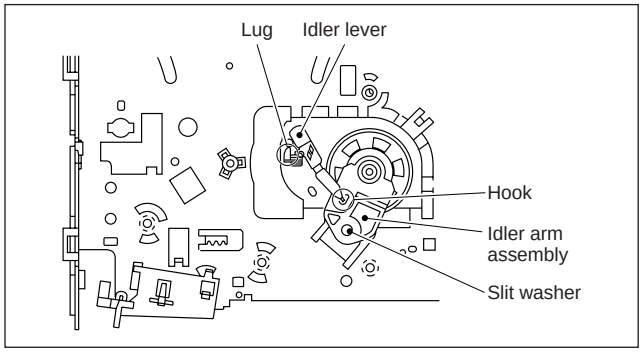


Fig. 2-2-22a

2.2.23 Stator assembly

(1) Remove the flat cable.
(2) Remove the two screws (A), (B) and remove the lug wire.
(3) Remove the stator assembly by lifting in the arrow-indicated direction. (Take care that the brush spring does not jump out.)

Notes:

- ***Be careful not to lose the brush and spring.***
- ***There are some models that do not use the lug wire. Refer to the parts list for these models.***
- ***When tightening the screw (B), place the caulked part of the lug terminal near to the shaft of the drum and then tighten it.***
- ***After installation, be sure to perform the switching point adjustment according to the electrical adjustment procedure.***

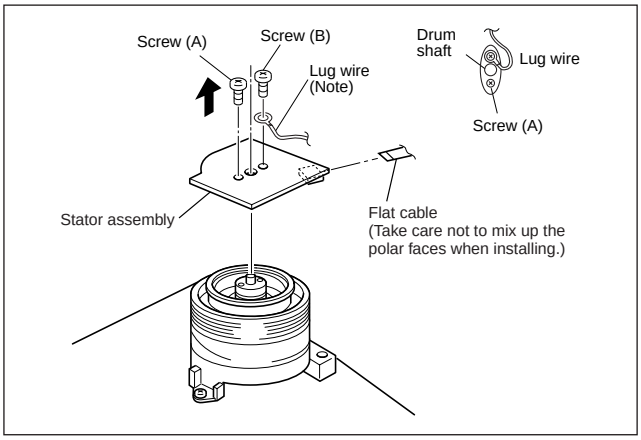


Fig. 2-2-23a

2.2.24 Rotor assembly

1. How to remove

(1) Remove the stator assembly.
(2) Remove the two screws (B) and remove the rotor assembly.

2. How to install

(1) Match the phases of the upper drum assembly and the rotor assembly as indicated in Fig.2-2-24a.
(2) Place the upper drum assembly hole (a) over the rotor assembly holes (b) (with three holes to be aligned) and tighten the two screws (B). (See Fig.2-2-24a.)

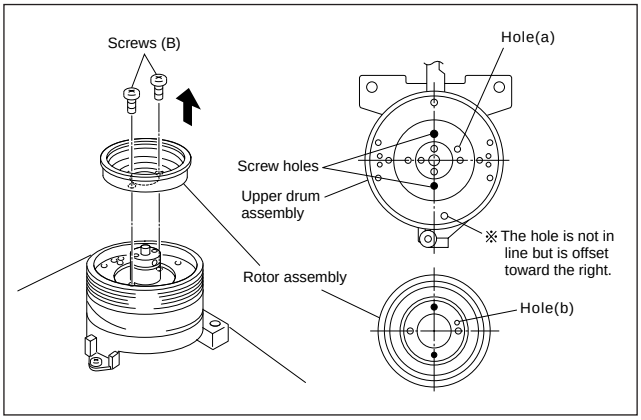


Fig. 2-2-24a

2.2.25 Upper drum assembly

Notes:

- ***To replace the upper drum assembly only may not be possible with some models. For upper drum assembly replacement, refer to the parts list. (When the parts number of the upper drum assembly is not listed on the parts list, then this cannot be replaced.)***
- ***When replacement is required, control the up- down movement of the brush. Never apply grease.***
- ***When replacing the upper drum assembly, replace it the together with the washer.***

1. How to remove

(1) Remove the stator assembly and rotor assembly.
(2) Loosen the screw of the collar assembly using a 1.5 mm hexagonal wrench and remove the collar assembly. Also remove the brush, spring and cap at one time.
(3) Remove the upper drum assembly and remove the washer using tweezers.

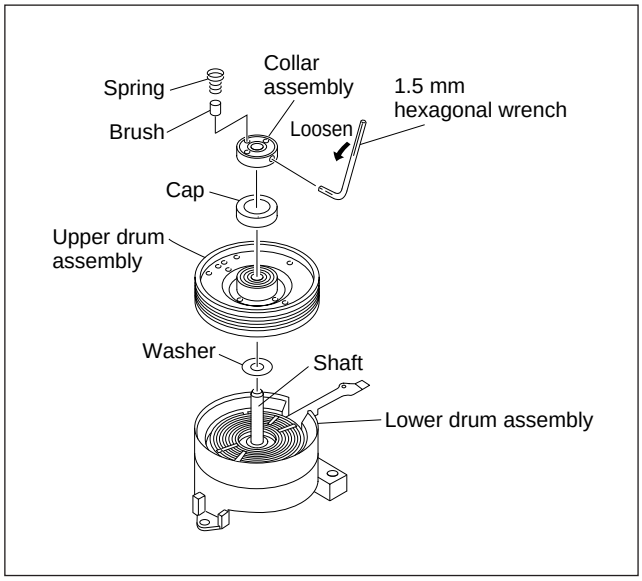


Fig. 2-2-25a

2. How to install

(1) Clean the coil parts of the lower drum assembly and the newly installed upper drum assembly with an air brush in advance. (See Fig.2-2-25b.)
(2) Install a new washer and upper drum assembly on the drum shaft. (See Fig.2-2-25a.)
(3) Install the cap to the upper drum assembly.
(4) Position the collar assembly as indicated in Fig.2-2-25c while controlling its up- down movement.
(5) Secure the collar assembly in position with a hexagonal wrench while pressing its top with the fingers.
(6) After installation, gently turn the upper drum assembly with your hand to make sure that it turns normally. Then install the brush and the spring.
(7) Install the rotor assembly and stator assembly according to Fig 2-2-23a and 2-2-24a.
(8) When installation is complete, clean the upper drum assembly and lower drum assembly and carry out the following adjustments.
    - PB switching point adjustment
    - Slow tracking adjustment
    - Compatibility adjustment (Be sure to check for compatibility for the EP (or LP) mode.)

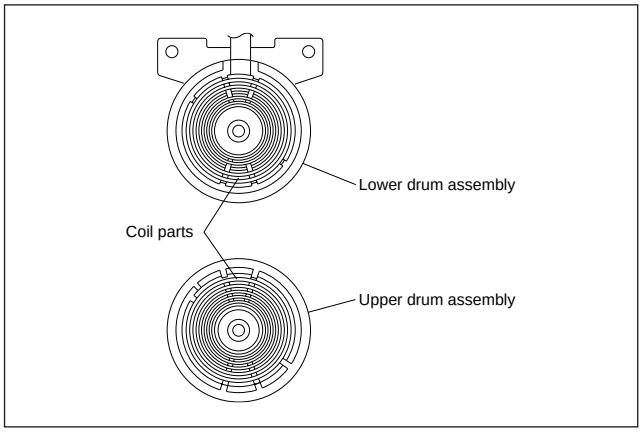


Fig. 2-2-25b

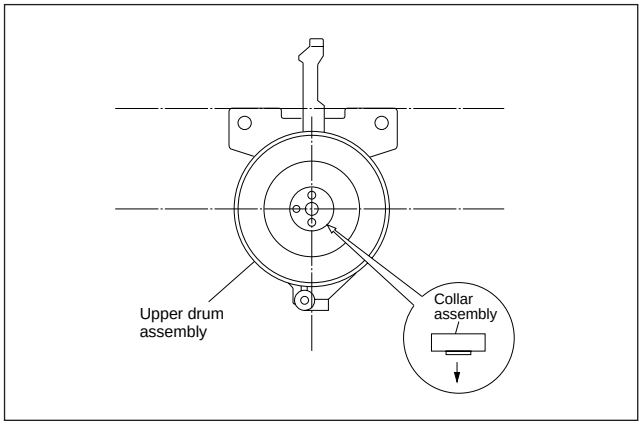


Fig. 2-2-25c

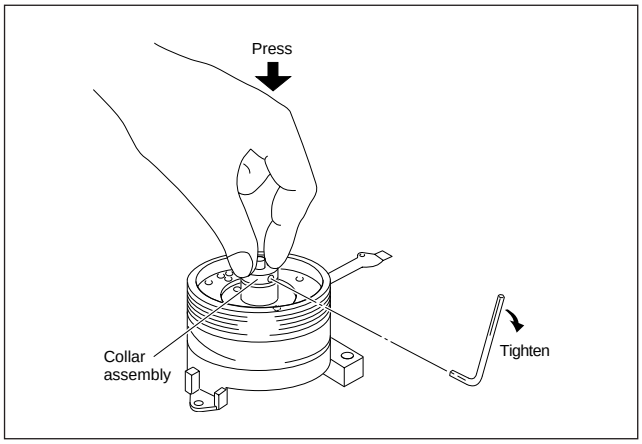


Fig. 2-2-25d

2.3 Compatibility adjustment

Notes:

- ***Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the A/C head, drum assembly or any part of the tape transport system.***
- ***To avoid any damage to the alignment tape while performing the compatibility adjustment, get a separate cassette tape (for recording and play back) ready to be used for checking the initial tape running behavior.***
- ***Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.***
- ***When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DISASSEMBLY.)***

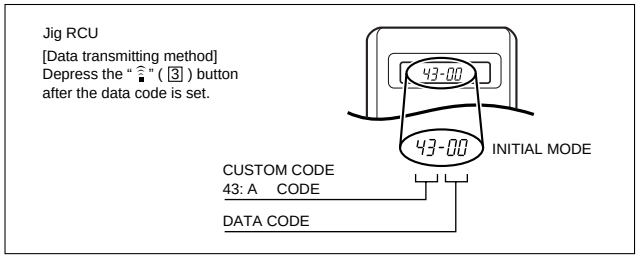


Fig. 2-3a Jig RCU [PTU94023B]

2.3.1 FM waveform linearity

Signal	(A1) (A2)	• Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Set the VCR to the manual tracking mode.
(4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 2-3-1a.)
(5) Reduce the V.PB FM waveform by the tracking operation. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 2-3-1c.)
(6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
(7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
(8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 2-3-1d.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

(9) Repeat steps (1) to (8) by using the alignment tape (A2).

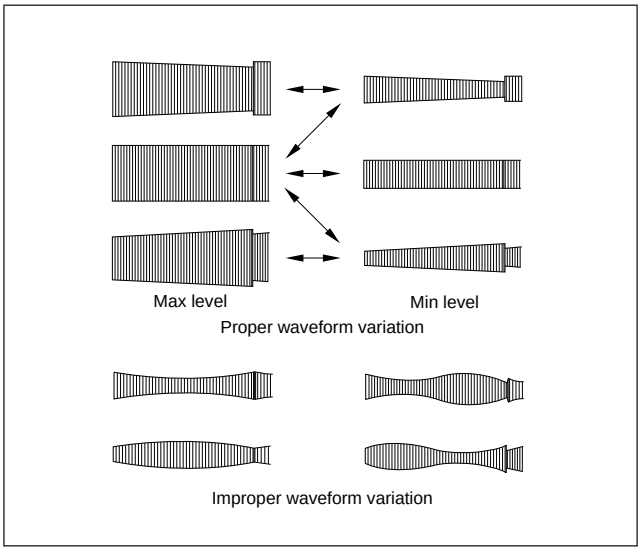


Fig. 2-3-1a

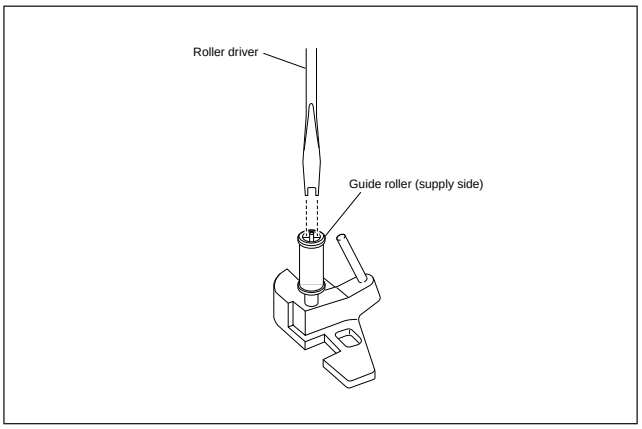


Fig. 2-3-1b

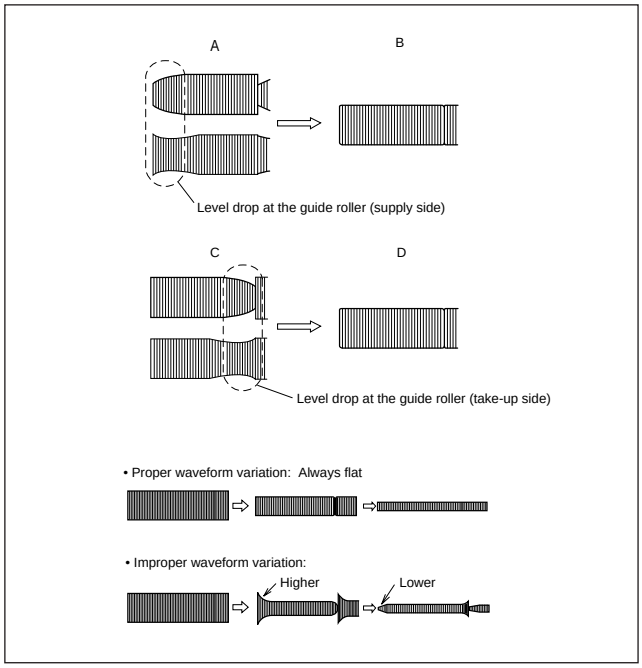


Fig. 2-3-1c

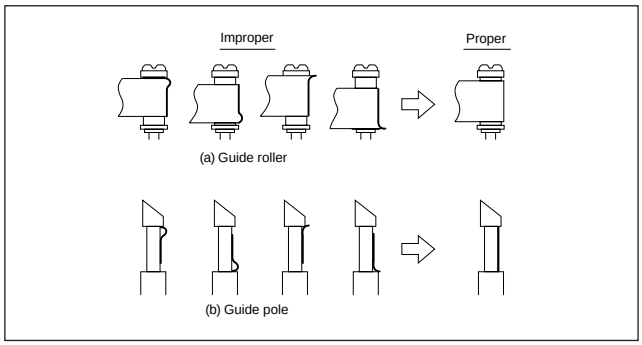


Fig. 2-3-1d

2.3.2 Height and tilt of the A/C head

Note:

- ***Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See Fig.2-2-6c.)***

Signal	(A)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
(3) Set the VCR to the manual tracking mode.
(4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

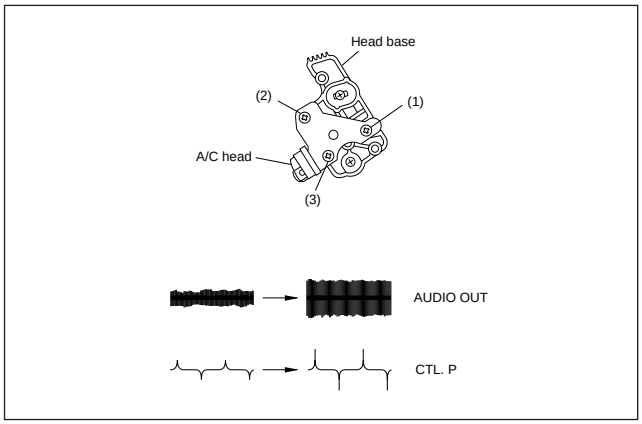


Fig. 2-3-2a

2.3.3 A/C head phase (X-value)

Signal	(A1)	• Alignment tape(SP, stairstep, PAL) [MHPE]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• A/C head positioning tool [PTU94010]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Set the VCR to the manual tracking mode.
(4) Loosen the screws (4) and (5), then set the A/C head positioning tool to the innermost projected part of the A/C head. (See Fig. 2-3-3a.)
(5) Turn the A/C head positioning tool fully toward the capstan. Then turn it back gradually toward the drum and stop on the second peak point position of the V.PB FM waveform output level. Then tighten the screws (4) and (5).
(6) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

[Perform adjustment steps (7) to (10) only for 2 Head models equipped with LP mode.]

(7) Then play back the alignment tape (A2).
(8) Set the VCR to the manual tracking mode.
(9) Perform the tracking operation and make sure that the V.PB FM waveform is at its maximum.
(10) If it is not at maximum, loosen the screws (4) and (5), and turn the A/C head positioning tool to bring the A/C head to a position, around where the waveform reaches its maximum for the first time. Then tighten the screws (4) and (5).

Note:

- ***After adjusting, always perform the confirmation and re-adjustment of the item 2.3.4.***

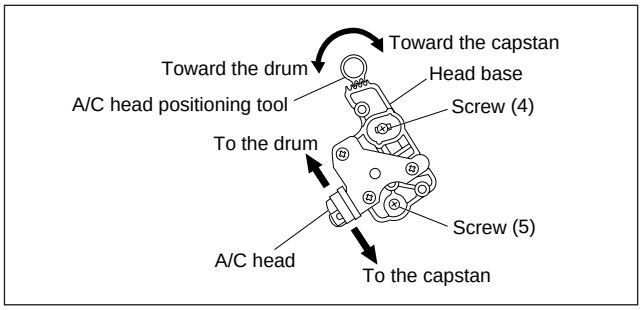


Fig. 2-3-3a

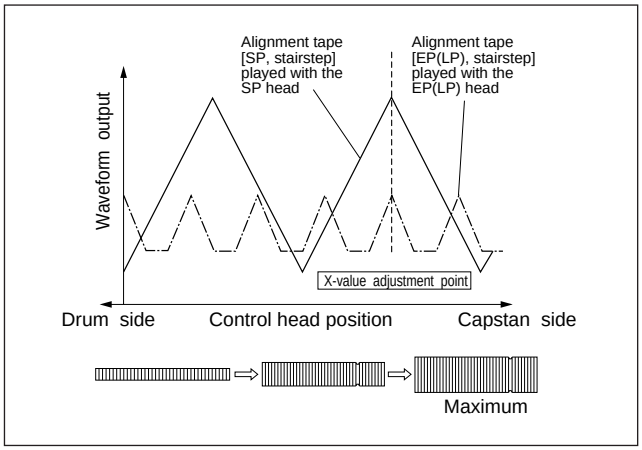


Fig. 2-3-3b

2.3.4 Standard tracking preset

Signal	(A)	• Alignment tape(LP, stairstep, PAL) [MHPE-L]
Mode	(B)	• PB → Auto adjust
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code “50”
Specified value	(G)	• STOP mode (Maximum V.PB FM waveform)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Confirm that the automatic tracking operation is completed.
(4) Set the VCR to the Auto adjust mode by transmitting the code (F) twice from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
(5) If the VCR enters the eject mode, perform adjustment for the audio control head phase (X-value) again.

2.3.5 Tension pole position

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B)	• PB
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm ($2.45 – 5 \times 10^{-3}$ Nm]

(1) Play back the back tension cassette gauge (A).
(2) Check that the indicated value on the left side gauge is within the specified value (G).
(3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.
  1) Set the VCR to the mechanism service mode. (See SECTION 1 DISASSEMBLY.)
  2) Set the VCR to the play back mode and adjust by turning adjustment pin to align the tension arm assembly edge with the main deck hole (A) on the right edge marker. (See Fig. 2-3-5a)

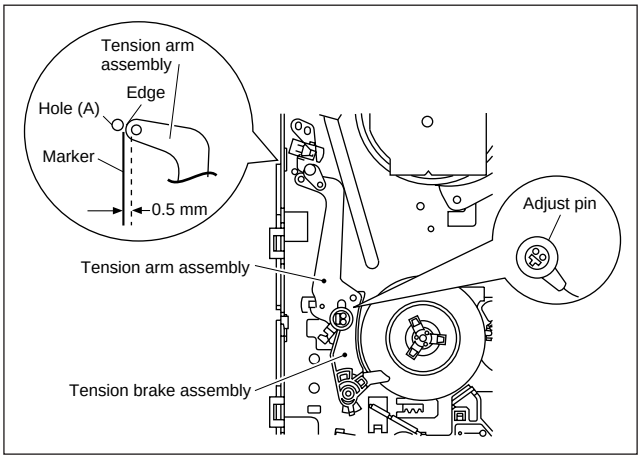
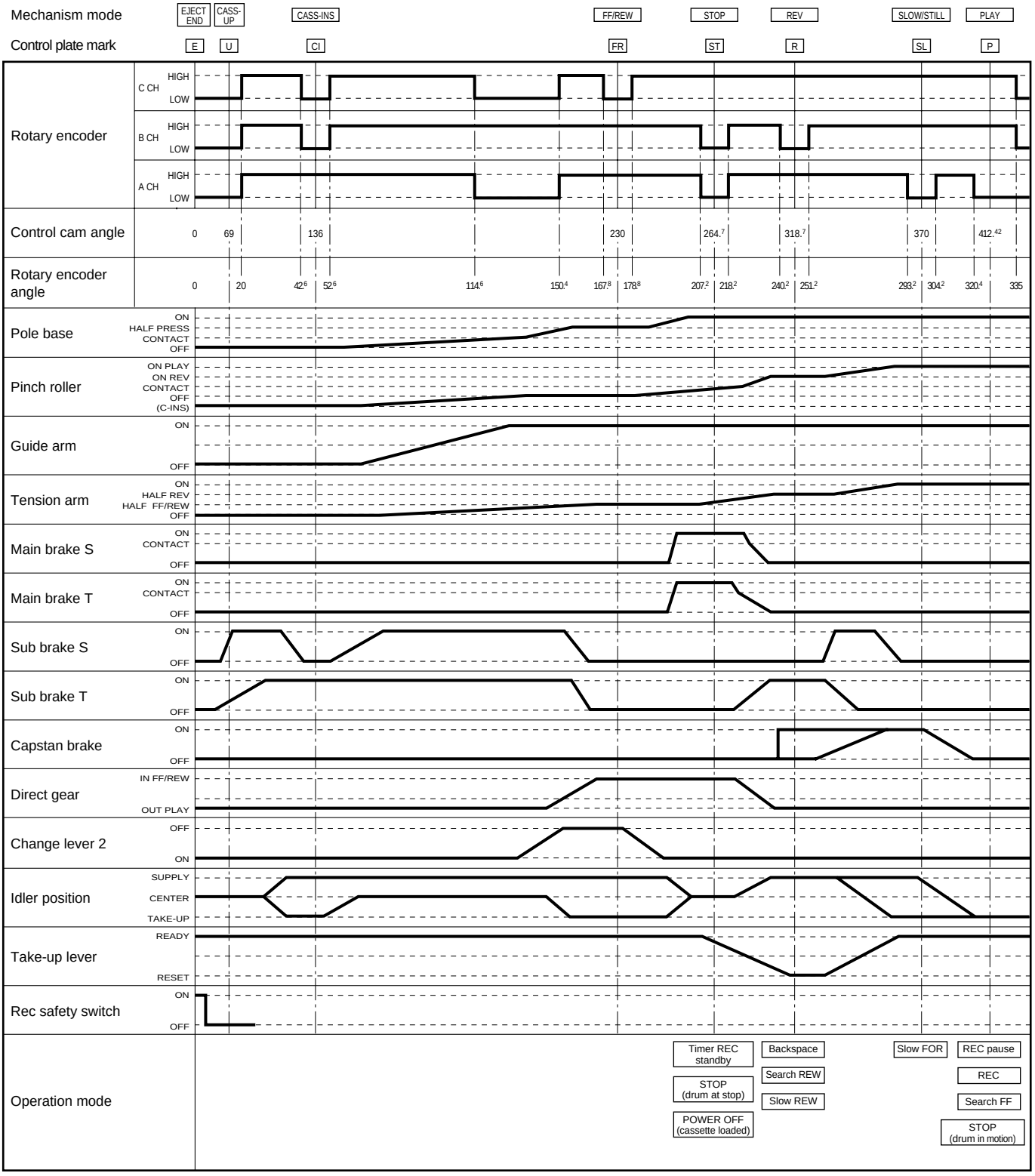


Fig. 2-3-5a

Mechanism Timing Chart



SECTION 3
ELECTRICAL ADJUSTMENT

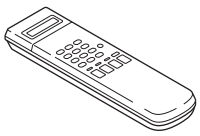
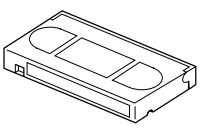
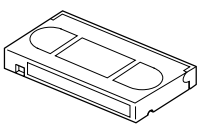
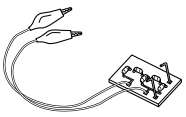
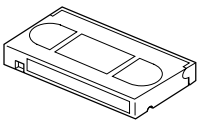
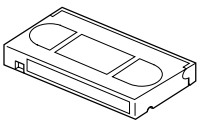
3.1 Precaution

The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.
In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.1.1 Required test equipments

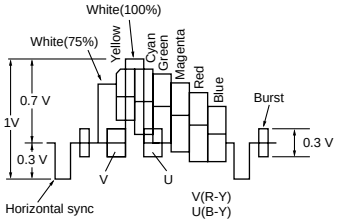
- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Frequency counter
- Audio level meter
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [PAL]
- Recording tape (VHS/SVHS)
- Digit-key remote controller (provided)

3.1.2 Required adjustment tools

Jig RCU PTU94023B	Alignment tape (SP, stairstep, PAL) MHPE	Alignment tape (LP, stairstep, PAL) MHPE-L
		
LPF PTU93006	Alignment tape (S-VHS, SP/LP, color (colour) bar) MH-2H	Alignment tape (SP, stairstep, NTSC) MHP
		

3.1.3 Color (colour) bar signal,Color (colour) bar pattern

• Color(colour) bar signal [PAL]



• Color(colour) bar pattern [PAL]

3.1.4 Switch settings and standard precautions

The SW settings of the VCR and the standard precautions for the electrical adjustments are as follows.

- **When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See SECTION 1 DISASSEMBLY.)**

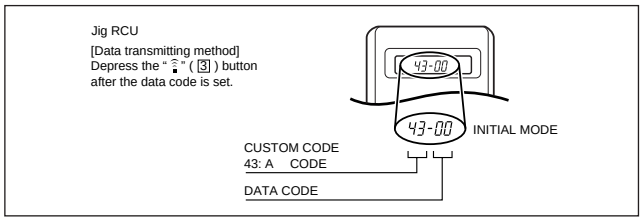


Fig. 3-1-4a Jig RCU [PTU94023B]

- **Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired.**
  If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF

- **If there is a reference to a signal input methed in the signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.**
- **Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.**

3.1.5 EVR Adjustment

Some of the electrical adjustments require the adjustment performed by the EVR system. The main unit have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- ***In the EVR adjustment mode, the value is varied with the channel buttons (+, –). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.***
- ***When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input.***
  The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- ***As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.***
- ***When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.***

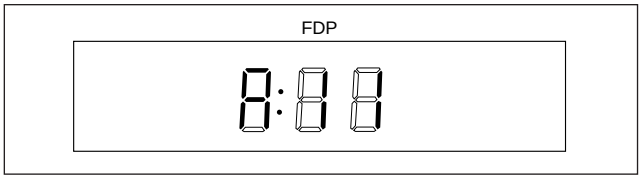


Fig. 3-1-5a EVR mode

3.2 Servo circuit

3.2.1 Switching point

Signal	(A1) (A2) (A3)	• Stairstep signal • Alignment tape(SP, stairstep, PAL) [MHPE] • Alignment tape(SP, stairstep, NTSC) [MHP]
Mode	(B)	• PB • TBC: OFF
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal (75Ω terminated) • TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)/slope : –
Adjustment part	(F)	• Jig RCU: Code “51” or “52”
Specified value	(G)	• 8.0 ± 0.5H [MHPE] • 7.5 ± 0.5H [MHP]
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the signal (A1) of the alignment tape (A2).
(2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
(3) Set the VCR to the manual tracking mode.
(4) Adjust tracking so that the V.PB FM waveform becomes maximum.
(5) Transmit the code (F) from the Jig RCU to adjust so that the trigger point of the VIDEO OUT waveform is changed from the trailing edge of the V.sync signal becomes the specified value (G).
(6) Set the VCR to the stop mode or eject mode.
(7) Play back the signal (A1) of the alignment tape (A3).
(8) Repeat steps (2) to (6).

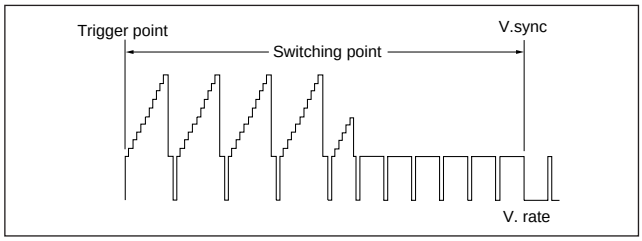


Fig. 3-2-1a Switching point

3.2.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2)	• VHS SP • VHS LP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig code “71“ or “72”
Specified value	(G)	• Minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(2) Set the VCR to the manual tracking mode.
(3) Set the VCR to the FWD slow (+1/6x) mode.
(4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
(5) Set the VCR to the Stop mode.
(6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
(7) Repeat steps (3) to (6) in the REV slow (–1/6x) mode.
(8) Repeat steps (1) to (7) in the mode (B2).

Note:
- **For FWD slow (+1/6x) playback, transmit the code “08” from the Jig RCU to enter the slow playback mode, and transmit the code “D0” for REV slow (–1/6x) mode.**

3.3 Video circuit

3.3.1 D/A level

Signal	(A1) (A2) (A3)	• Ext. S-input / Ext. input • Color (colour) bar signal [PAL] • S-VHS tape
Mode	(B)	• S-VHS • EE
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
Adjustment part	(F)	• VR1401 (D/A LEVEL ADJ) [3D TBC/2M board]
Specified value (Note)	(G)	• 1.00 ± 0.015 Vp-p (reference value)

(1) Insert the cassette tape (A3) to enter the mode (B).
(2) Observe the Y OUT waveform at the measuring point (D).
(3) Check the Y level value when the External S-input (Y/C separated video signal).
(4) Switch the input signal to the External input (composite video signal), and adjust the adjustment part (F) so that the Y level becomes the same value observed in step (3).

Note:
- ***The specified value (G) is just a reference value to be obtained when the External S-Video (Y/C separated video) signal is input. In actual adjustment, set it to the value observed in step (3).***

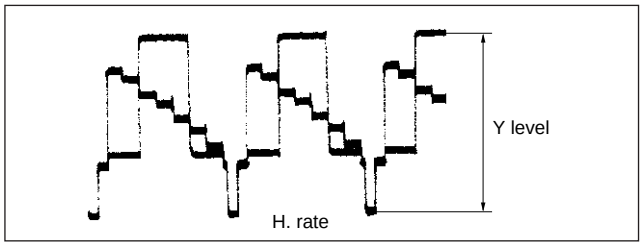


Fig. 3-3-1a D/A level

3.3.2 EE Y/PB Y (S-VHS/VHS) level

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [PAL]
Mode	(B1) (B2) (B3)	• EE • S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2) (F3) (F4)	• Jig code “57” • A : 11 • Jig code “21” twice • Jig code “18” or “19” (Channel +/-)
Specified value	(G)	• 1.00 ± 0.03 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Set the VCR to the mode (B1).
(2) Observe the Y OUT waveform at the measuring point (D).
(3) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.

(4) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
(5) Transmit the code (F4) from the Jig RCU to adjust so that the Y level of the Y OUT waveform becomes the specified value (G).
(6) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(7) Record the signal (A2) in the mode (B2), and play back the recorded signal.
(8) Set the VCR to the manual tracking mode.
(9) Repeat steps (1) to (5) in the mode (B2).
(10) Record the signal (A2) in the mode (B3), and play back the recorded signal.
(11) Set the VCR to the manual tracking mode.
(12) Repeat steps (1) to (5) in the mode (B3).

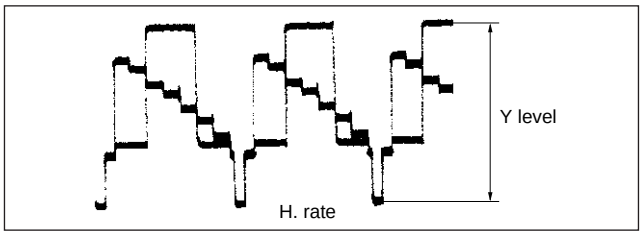


Fig. 3-3-2a EE/PB Y level

3.3.3 REC color (colour) level

Signal	(A1)	• Alignment tape(S-VHS, SP/LP, Color(colour) bar) [MH-2H]
	(A2)	• Ext. input
	(A3)	• Color (colour) bar signal [PAL]
Mode	(B1)	• S-VHS SP
	(B2)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D1)	• TP106 (PB. FM)
	(D2)	• PB color (colour) output of the LPF
External trigger	(E)	• TP111 (D.FF)
EVR mode	(F1)	• Jig code “57”
EVR address	(F2)	• A : 02
	(F3)	• Jig code “20” and “22”
	(F4)	• Jig code “18” or “19” (Channel +/-)
Specified value	(G)	• SP: “B” x 125 ± 5% • LP: “B” x 125 ± 5%
Adjustment tool	(H1)	• Jig RCU [PTU94023B]
	(H2)	• LPF [PTU93006] (See Fig. 3-3-3a.)

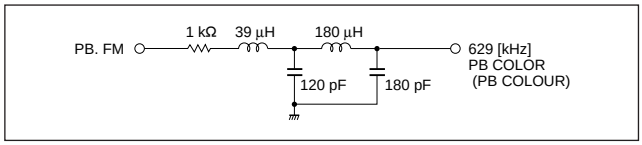


Fig. 3-3-3a LPF

(1) Connect the adjustment tool (H2) to the measuring point (D1).
(2) Apply the external trigger signal to D.FF (E) to observe the PB color (colour) waveform at the measuring point (D2).
(3) Play back the signal (A3) in the mode (B1) of the alignment tape (A1).
(4) Set the VCR to the manual tracking mode.
(5) Adjust tracking so that the PB color (colour) waveform becomes maximum. Make a note of the higher PB color (colour) level as “B” at this time.
(6) Record the signal (A3) in the mode (B1), and play back the recorded signal.
(7) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(8) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
(9) Transmit the code (F4) from the Jig RCU to adjust so that the higher level channel becomes the specified value (G) of the note "B" level as shown in Fig. 3-3-3b. (Adjust before recording, then confirm it by playing back.)
(10) After adjustment, record the signal (A3) then playing it back again. At this time, confirm that there is no inverting phenomenon or noise appearing on the playback screen.
(11) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(12) Repeat steps (3) to (11) in the mode (B2).

Note:

- ***After adjusting, always perform the confirmation and re-adjustment of the item 3.4.1.***

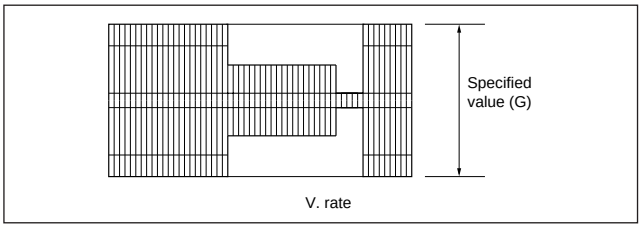


Fig. 3-3-3b REC color (colour) level

3.3.4 Video EQ (Frequency response)

Signal	(A1)	• Ext. S-input
	(A2)	• Video sweep signal
Mode	(B1)	• S-VHS SP
	(B2)	• S-VHS LP
	(B3)	• Picture Control / Smart Picture REC : Normal / Natural PB : Edit / Distinct
Equipment	(C)	• Oscilloscope
Measuring point	(D1)	• Y OUT terminal (75Ω terminated)
Frequency marker	(D2)	• 3 [MHz]
External trigger	(E)	• TP111 (D.FF)
EVR mode	(F1)	• Jig code “57”
EVR address	(F2)	• A : 03
	(F3)	• Jig code “20” and “23”
	(F4)	• Jig code “18” or “19” (Channel +/-)
Specified value	(G)	• SP: 3.6 ± 0.4 div. (–1 ± 1 dB) • LP: 3.2 ± 0.4 div. (–2 ± 1 dB)
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Apply the external trigger signal to D.FF (E) to observe the Y OUT waveform at the measuring point (D1).
(2) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(3) Set the VCR to the manual tracking mode.
(4) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(5) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
(6) Set the slope of the oscilloscope to the channel having higher (D2) marker level of the Y OUT waveform [signal (A2)]. Then set the 100 kHz marker level to the “4” scale on the oscilloscope. In this condition, transmit the code (F4) from the Jig RCU to adjust so that the (D2) marker level reaches the specified value (G).

(7) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(8) Repeat steps (2) to (7) in the mode (B2).

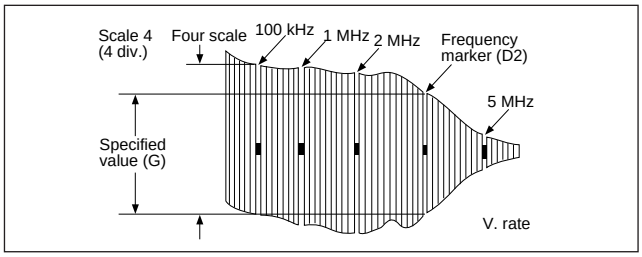


Fig. 3-3-4a Video EQ (Frequency Response)

3.3.5 Auto picture initial setting

Signal	(A1) (A2) (A3)	• Ext. input • Video: Optional • VHS tape
Mode	(B)	• EE → Auto adjust (SP/LP REC → PB)
Adjustment part	(F)	• Jig code “58”
Specified value	(G)	• STOP mode
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Insert the cassette tape (A3).
(2) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed. When the VCR enters the eject mode, repeat steps (1) to (2) again.

3.4 Audio circuit

Notes:

- ***This adjustment should be done after the “REC color (colour) level adjustment” for the video circuit has been completed.***
- ***GND (Ground) should be taken from the Tuner shield case.***

3.4.1 Audio REC FM

Signal	(A1) (A2) (A3)	• Ext. input • Audio: No signal • Video: Color (colour) bar signal [PAL]
Mode	(B)	• S-VHS LP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. PB. FM)
External trigger	(E)	• TP111 (D.FF)
EVR mode EVR address	(F1) (F2) (F3) (F4)	• Jig code “57” • A : 30 • Jig code “23” and “20” • Jig code “18” or “19” (Channel +/-)
Specified value	(G1) (G2)	• 400 ± 100 mVp-p • More than 250 mVp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).
(2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.
(3) Set the VCR to the manual tracking mode.
(4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.
(5) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(6) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
(7) Transmit the code (F4) from the Jig RCU to adjust so that the A.PB FM level of the higher channel level becomes the specified value (G1). (Adjust before recording, then confirm it by playing back.)
(8) If the specified value (G1) is not obtained, transmit the code (F4) from the Jig RCU to adjust so that the waveform level of the lower channel level becomes the specified value (G2). (Adjust before recording, then confirm it by playing back.)
(9) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)

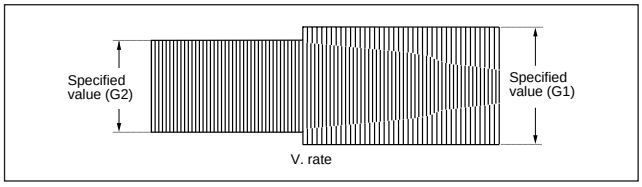


Fig. 3-4-1a Audio REC FM

3.5 Syscon circuit

Note:

- **When perform this adjustment, remove the Mechanism assembly.**

3.5.1 Timer clock

Signal	(A)	• No signal
Mode	(B)	• EE
Equipment	(C)	• Frequency counter
Measuring point Short point	(D1) (D2) (D3)	• IC3001 pin 61 • IC3001 pin 24 • C3026 + and –
Adjustment part	(F)	• C3025 (TIMER CLOCK)
Specified value	(G)	• 1024.008 ± 0.001 Hz (976.5549 ± 0.0010 µsec)

(1) Connect the frequency counter to the measuring point (D1).
(2) Connect the short wire between the short point (D2) and Vcc (5V).
(3) Short the leads of capacitor (D3) once in order to reset the microprocessor of the SYSCON.
(4) Disconnect the short wire between the short point (D2) and Vcc then connect it again.
(5) Adjust the Adjustment part (F) so that the output frequency becomes the specified value (G).

JVC

VICTOR COMPANY OF JAPAN, LIMITED
VIDEO DIVISION

S40894

Printed in Japan

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

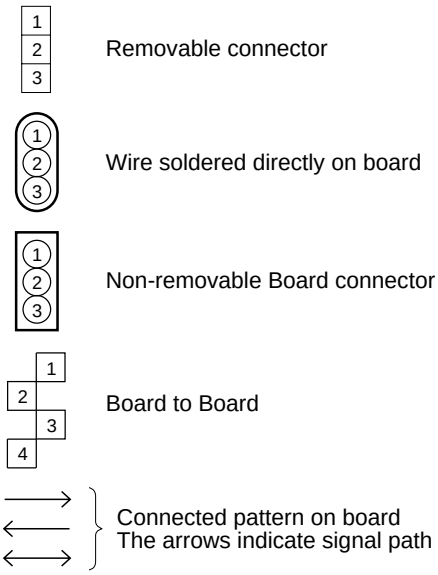
1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K or k: kΩ (1000Ω), M: MΩ (1000kΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

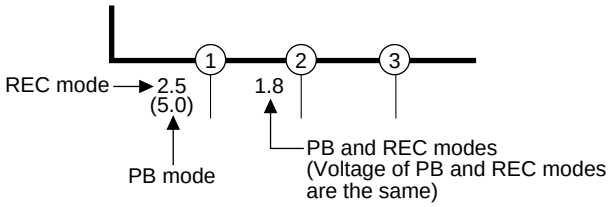
$\overline{\text{AUX}}$ or AUX(L) : Active at low

3. Interpreting Connector indications



4. Voltage measurement

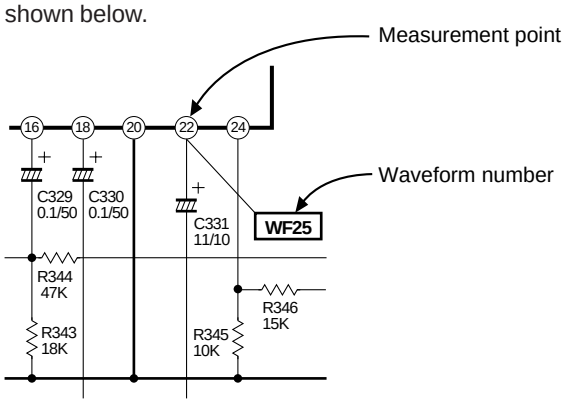
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



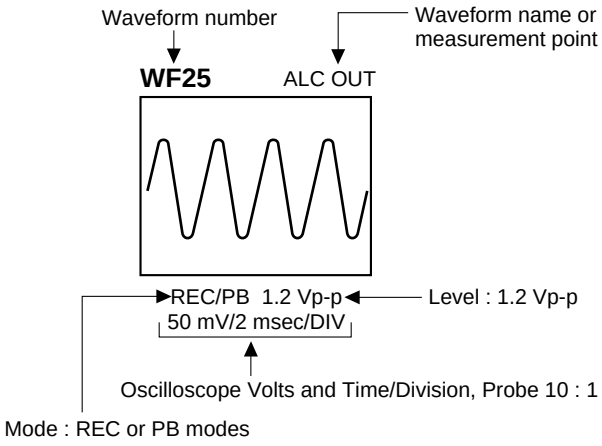
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

Playback signal path

Playback and recording signal path

Recording signal path
(including E-E signal path)

Capstan servo path

Drum servo path

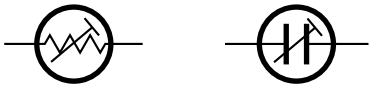
(Example)

R-Y Playback R-Y signal path

Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

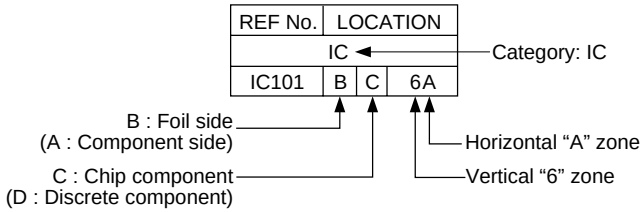
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

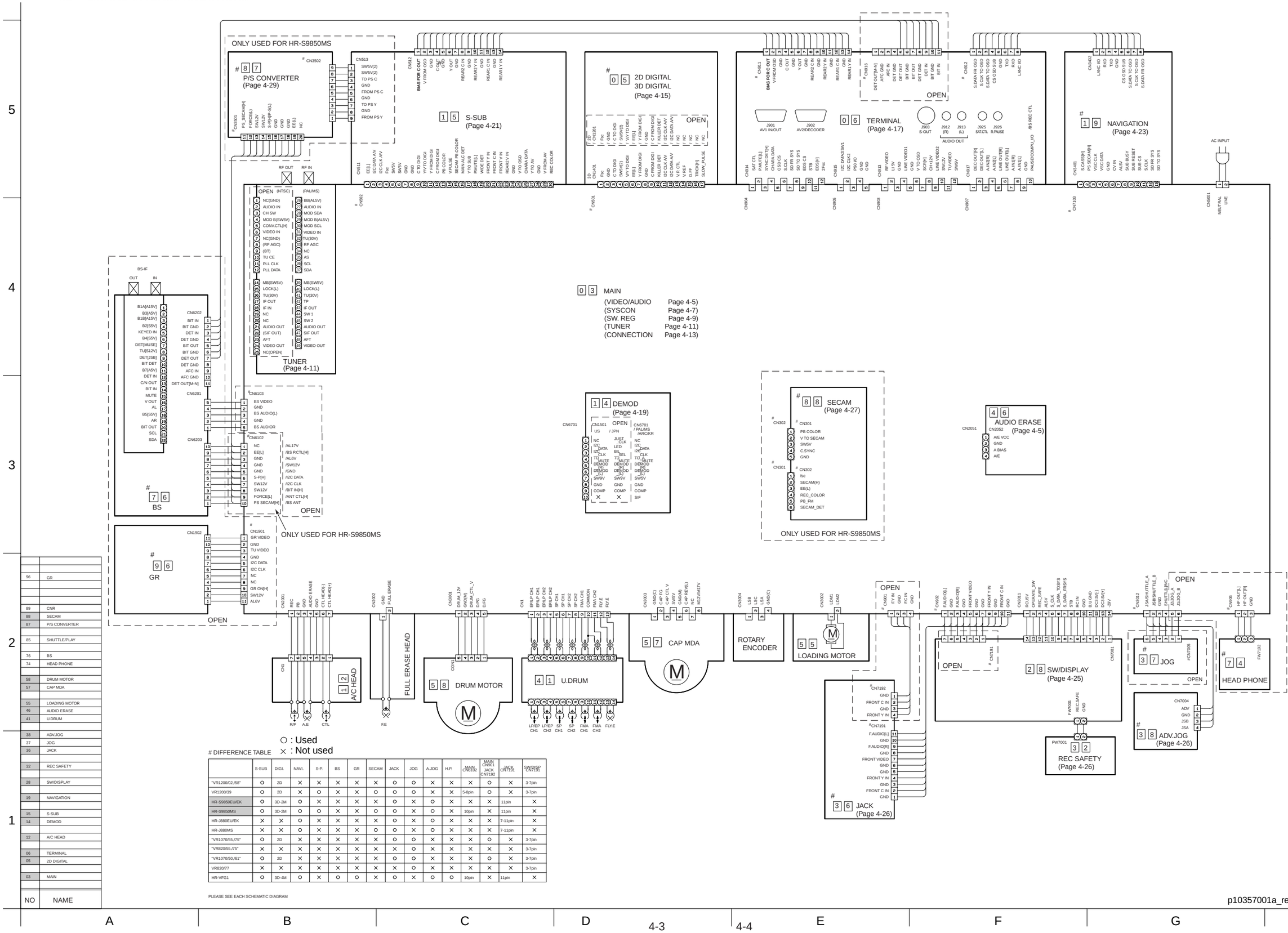
Parts location are indicated by guide scale on the circuit board.



Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS



NO	NAME
96	GR
89	CNR
88	SECAM
87	P/S CONVERTER
85	SHUTTLE/PLAY
76	BS
74	HEAD PHONE
58	DRUM MOTOR
57	CAP MDA
55	LOADING MOTOR
46	AUDIO ERASE
41	U.DRUM
38	ADVJOG
37	JOG
36	JACK
32	REC SAFETY
28	SW/DISPLAY
19	NAVIGATION
15	S-SUB
14	DEMOD
12	A/C HEAD
06	TERMINAL
05	2D DIGITAL
03	MAIN

DIFFERENCE TABLE

	S-SUB	DIGI.	NAVI.	S-P.	BS	GR	SECAM	JACK	JOG	A.JOG	H.P.	MAIN CN6102	MAIN CN901 JACK CN7192	JACK CN7191	SW/DISP CN7191
"VR1200/02,/58"	○	2D	×	×	×	×	×	○	○	×	×	×	○	×	3-7pin
VR1200/39	○	2D	×	○	×	×	○	○	○	×	×	5-8pin	○	×	3-7pin
HR-S9850EU/EK	○	3D-2M	○	×	×	×	×	○	×	○	×	×	×	11pin	×
HR-S9850MS	○	3D-2M	○	○	×	×	○	○	×	○	×	10pin	×	11pin	×
HR-J880EU/EK	×	×	○	×	×	×	×	○	×	○	×	×	×	7-11pin	×
HR-J880MS	×	×	○	×	×	×	○	○	×	○	×	×	×	7-11pin	×
"VR1070/55,/75"	○	2D	×	×	×	×	×	○	○	×	×	×	○	×	3-7pin
"VR820/55,/75"	×	×	×	×	×	×	×	×	○	×	×	×	×	×	3-7pin
"VR1070/50,/61"	○	2D	×	×	×	×	×	○	○	×	×	×	○	×	3-7pin
VR820/77	×	×	×	×	×	×	×	×	○	×	×	×	×	×	3-7pin
HR-VFG1	○	3D-4M	○	×	○	○	×	○	×	○	○	10pin	×	11pin	×

PLEASE SEE EACH SCHEMATIC DIAGRAM

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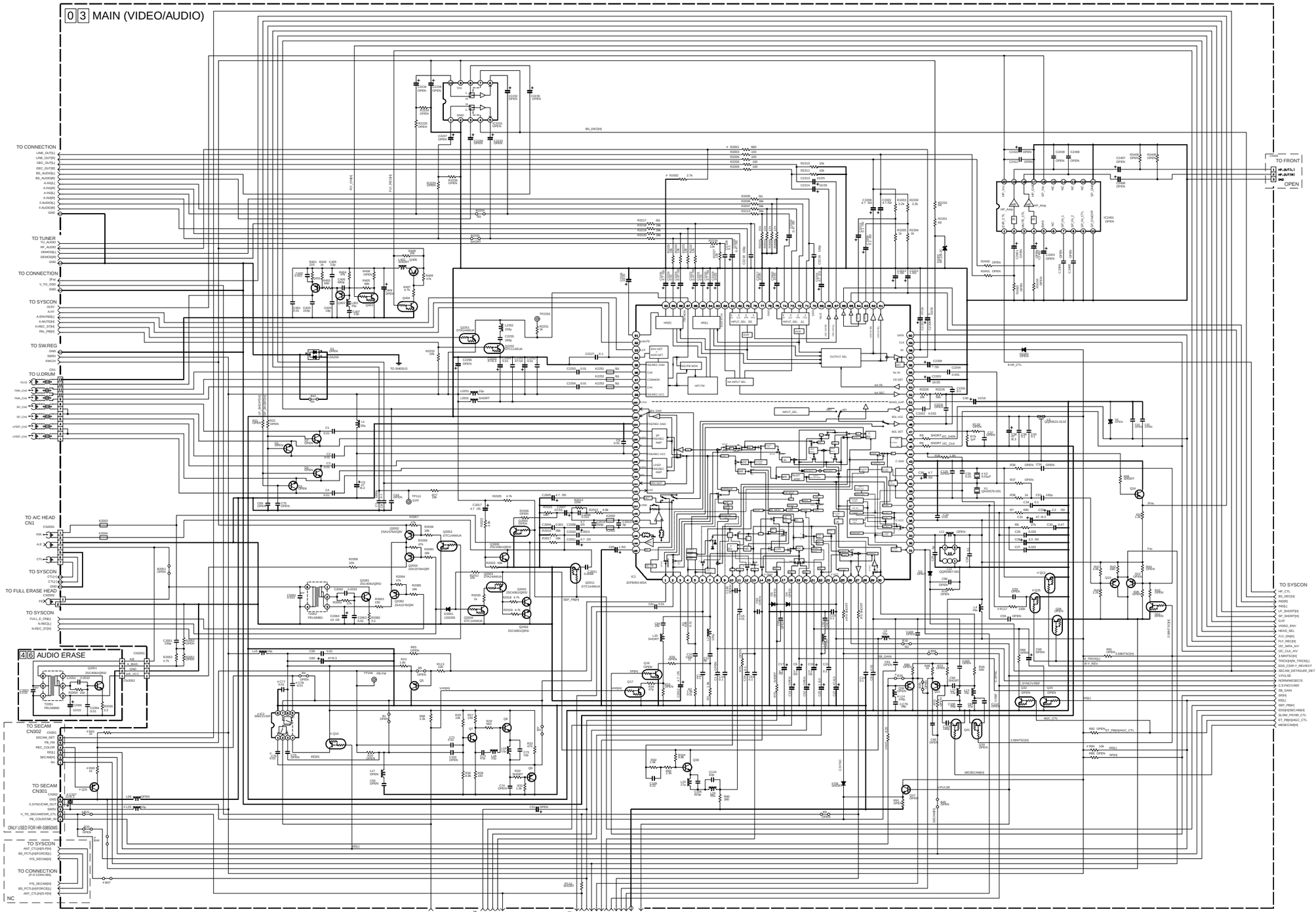
4.2 MAIN (VIDEO/AUDIO) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE VIDEO

○ : Used
× : Not used

	B3	"B26,B44" "R47,R60,R61,R64" "C76,C77,C78,C79,C107"	IC2 "Q14,Q31" "L141,25"	D8	B21	B47
EURO	○	×			×	×
MS S-P	×	○			○	×
S-P/P-S	×	○			×	○

		B56 Q13	Q25 R117 X2	R4
2D		○	×	○
3D/TBC	EURO	×	○	×
	MS	×	○	○

DIFFERENCE TABLE AUDIO

	"R2001," "R2002," C2206
WITH RF OUT	○
W/O RF OUT	×

K2001 - K2004 = NQL103K-R10X

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/ or 2SD1819A/QRS/ or 2PC4081/R/.
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QRS/ or 2SB1218A/QR/ or 2PA1576/R/.
ALL NPN TYPE DIGITAL TRANSISTORS ARE DTC144WUA or UN521E or PDTC144WU or RN1309.
ALL PNP TYPE DIGITAL TRANSISTORS ARE DTA144WUA or UN511E or PDTA144WU or RN2309
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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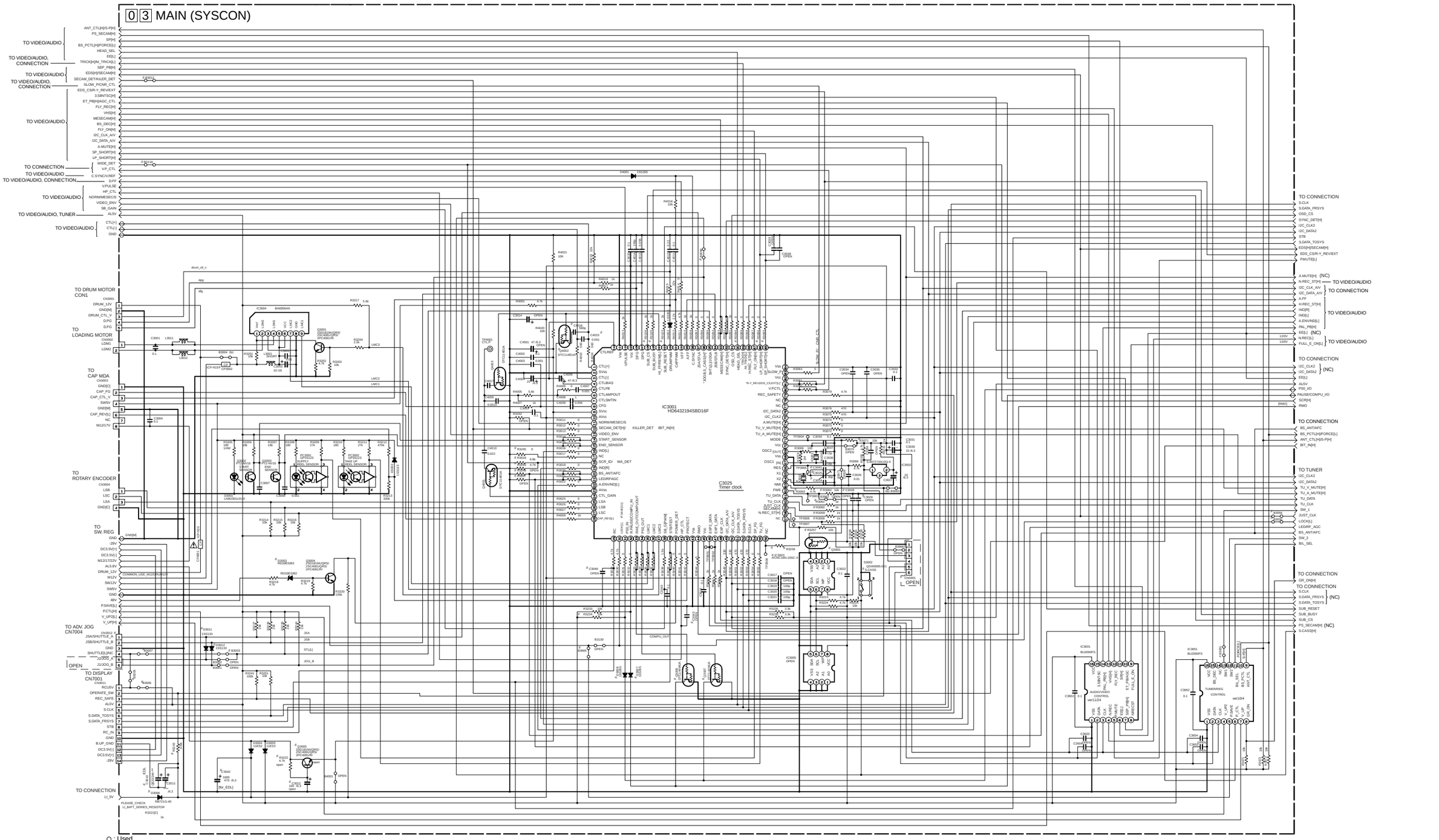
4.3 MAIN (SYSCON) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE

○ : Used
× : Not used

BACK UP TIME	C3010	C3011	C3042
3MIN	×	3300	×
10MIN	×	4700	×
60MIN	-229	×	○
BATT	×	3300	×

JOG CTL TYPE	CN3012	B3003 B3006 B3007	D3011 D3012	B3005
J/S	6Pin	○		×
ADV.JOG	4Pin	×		○

FEATURE TYPE	D3008 Q3007	D3007	Q3009	S3002
SVHS	×	×	×	○
TV-LINK[P50]	○	×	×	×
R.PAUSE	×	SHORT	×	×
R.A.EDIT	×	○	○	×
VR1200/39	○	SHORT	×	○

SUB CLK ADJ	X3001	C3025	C3041	C3024
ADJ	QAX0445	○	×	22p
FIX	QAX0444	×	10p	12p

	R3242	R3247	B3012	B3030	B3056 B3130	B3096	B3118	B3651	B3665
JPN	×	×	×	×	○	×	○	×	○
"UMJK"	0Ω	○	×	○	×	○	×	×	×
LATIN	0Ω	○	○	○	×	○	×	×	×
PH EURO	4.7k	×	○	○	×	○	×	○	○
JVC EURO	4.7k	×	○	○	×	×	×	○	○
ARC	0Ω	○	○	○	×	○	×	○	×

MECHA TYPE	C4015	C4016	Q4002	C4005	C4017	Q4003
Y29-2	0.001	×	×	○	×	×
Y29-T	0.001	×	×	×	○	○
Y29-T+SEP	330p	○	○	×	○	○

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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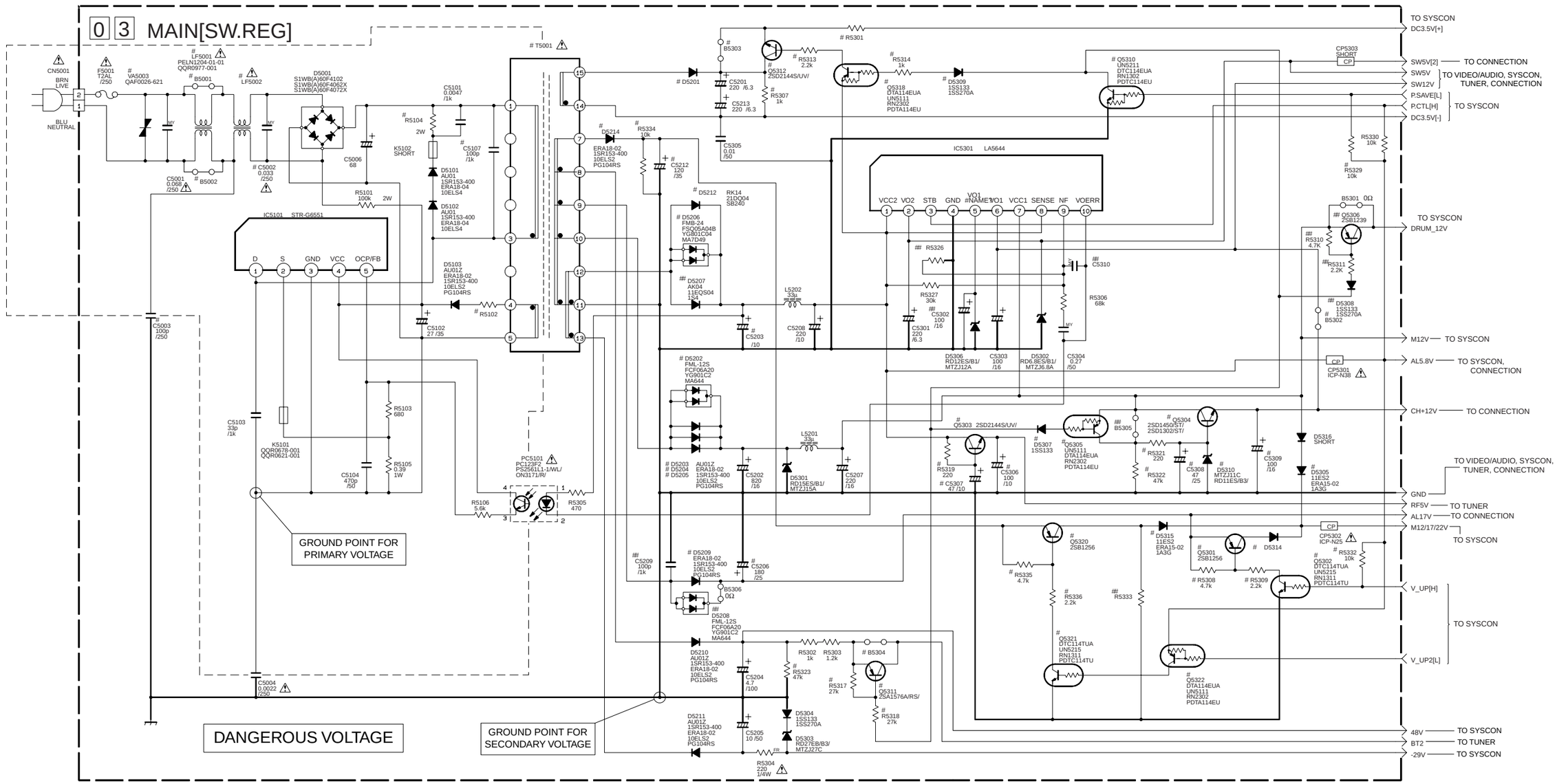
4.4 MAIN (SW.REG) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE 1

		D5202	D5203 D5204 D5205	D5206	D5212	C5203
D25	EU/EK/MS/A/M	NO	YES	NO	YES	1200
S1	EU/EK	YES	NO	YES	NO	1200
	MS	YES	NO	YES	NO	2200
	A	YES	NO	YES	NO	1200
	UM/M/EN/K	NO	YES	YES	NO	1200
S2,S35	EU/EK/MS	YES	NO	YES	NO	2200
S25 S36	EU/EK/MS	YES	NO	YES	NO	2200

DIFFERENCE TABLE 2

	LF5001	LF5002	C5002	B5001 B5002	C5107		
AC INPUT 220-240V (CE)	YES	QQR0978-001 QQR0608-001 QQR0609-001 QQR0610-001	YES	NO	YES		
AC INPUT 110-240V (OTHER)	NO	QQR0532-001 QQR0533-001 QQR0516-001 QQR0627-001 QQR0816-001	NO	YES	NO		

DIFFERENCE TABLE 3

CH+12V	B5302	Q5304 D5310 R5321 R5322 C5308 C5309
YES	NO	YES
NO	YES	NO

DIFFERENCE TABLE 4

P.SAVE		B5303 B5304	Q5305 Q5310 Q5311 Q5312 Q5318 D5307 D5309 R5307 R5313 R5314 R5317 R5318 R5323 R5329
YES	FF/REW 75s	NO	YES
	OTHER	NO	YES
NO		YES	NO

DIFFERENCE TABLE 5

		R5301	D5201
LEVEL IND	YES	EU/EK/MS 1	AK04 11EQS04 1S4
		OTHER SHORT	
LEVEL IND	NO	SHORT	AU01Z 10ELS2

MARK ELEMENTS ARE NOT MOUNTED

DIFFERENCE TABLE 6

	R5104	C5003	C5103	C5107	K5102
PHILIPS /75	68k	YES	33p	NO	SHORT
OTHER	150k	NO	33p	100p	SHORT

DIFFERENCE TABLE 7

HIGH SPEED FF/REW	Q5301 Q5302 D5209 C5206	R5308 R5309 R5332	D5305	D5314	D5315	Q5320 Q5321 Q5322 D5214	C5212 R5334 R5335 R5336	T5001	R5102
NO	NO		SHORT	NO	NO	NO		QQS0052-001	4.7
100s 85s	YES		YES	SHORT	NO	NO		QQS0052-001	4.7
75s	S1,S2,S35	YES	YES	11ES2 ERA15-02 1A3G	YES	YES		QQS0057-001	33
	S25,S36	YES	YES	11ES2 ERA15-02 1A3G	YES	YES		QQS0057-001	39

DIFFERENCE TABLE 8

	VA5003
JVC	NO
PHILIPS	YES

DIFFERENCE TABLE 9

	Q5303 R5319	C5306 C5307
PHILIPS /50 /61 /77	NO	
OTHER	YES	

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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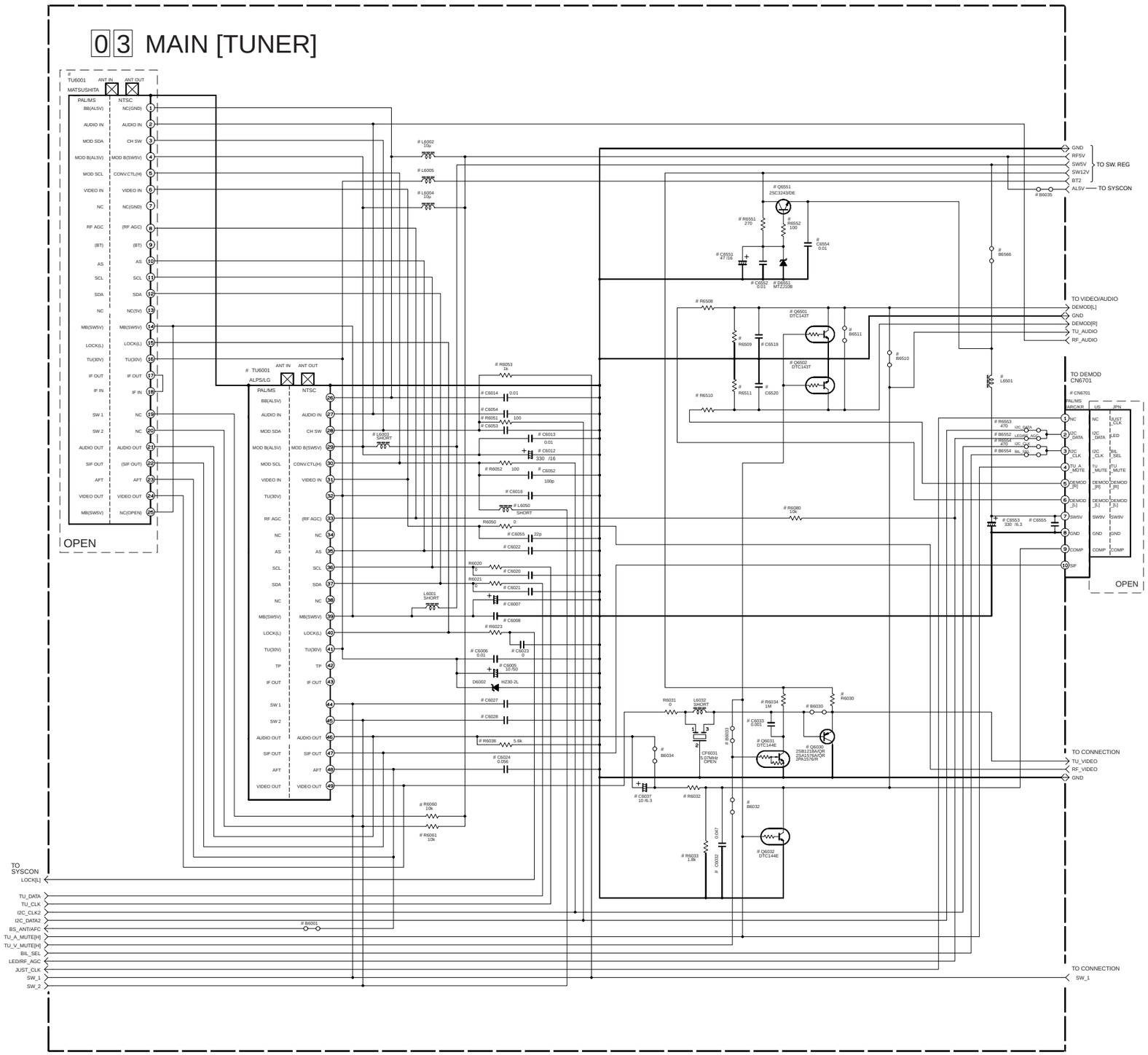
4.5 MAIN(TUNER) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

○ : Used
× : Not used

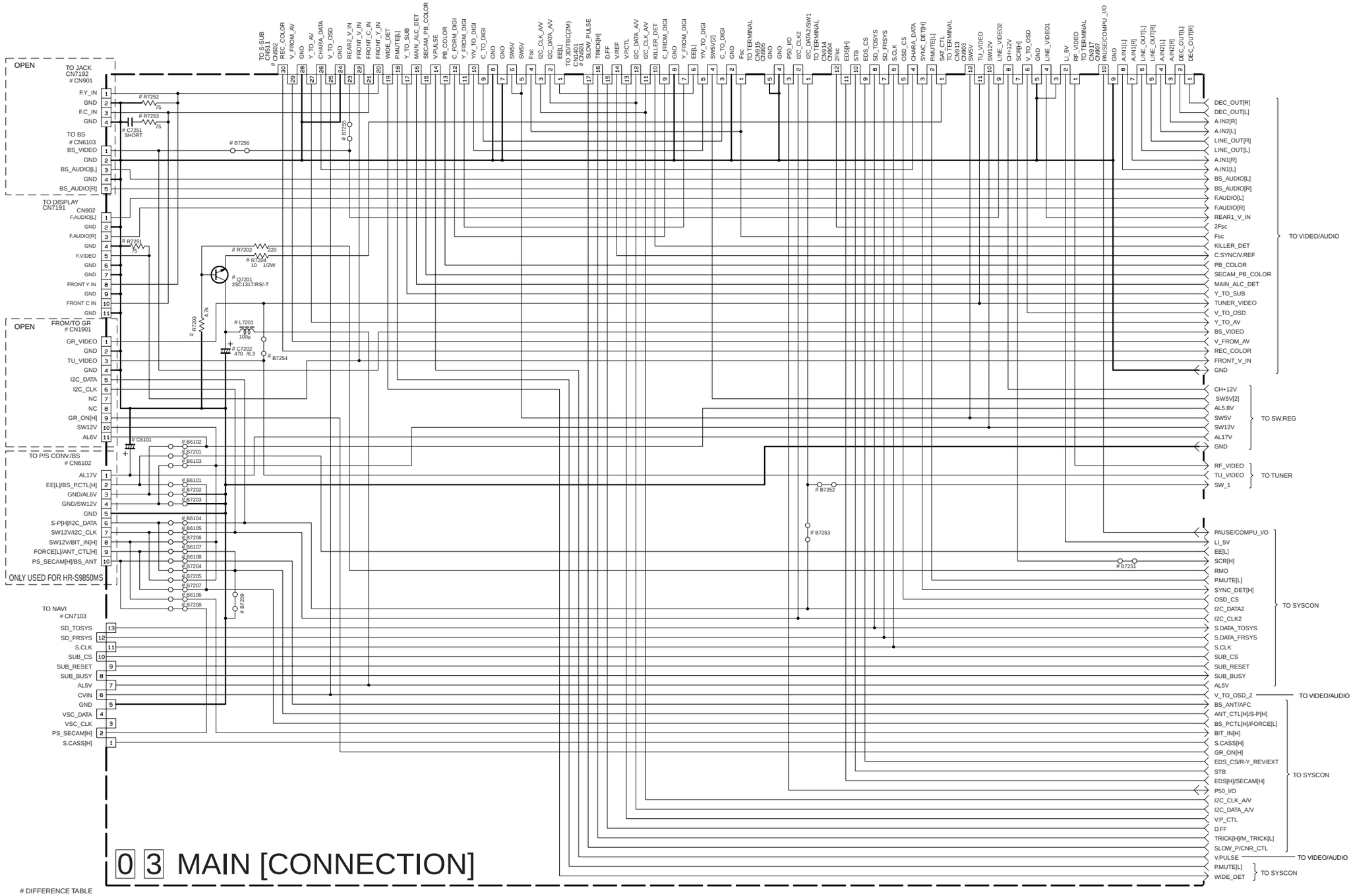
DIFFERENCE TABLE

		"/02,/58"	"EK,EU"	"MS,/39"	"/55,/75"	"/50,/77"	/61	JAPAN
TUNER UNIT		ALPS GAU0209	ALPS GAU0208	LG GAU0210	MATSUSHITA GAU0236	ALPS GAU0207	MATSUSHITA GAU0238	MATSUSHITA GAU0224
RF CONVERTER								
BB (RF 5V)	"L6002,C6014"	○	○	○	○	×	×	×
AUDIO IN	C6054	×	×	×	×	×	×	×
MOD SDA/CH SW	R6051	×	○	×	○	×	×	×
	R6053	×	×	×	×	○	○	×
	C6053	×	×	×	×	×	×	×
MOD B	L6003	×	×	×	×	○	○	×
	L6004	×	○	×	○	×	×	×
	C6012	×	×	×	×	×	×	×
	C6013	×	×	×	×	×	×	×
MOD SCL/CONV.CTL	R6052	×	○	×	○	×	×	×
	C6052	×	×	×	×	×	×	×
	L6050	×	×	×	×	○	○	×
VIDEO IN	R6050	×	○	×	○	○	○	×
	C6055	×	×	×	×	×	×	×
TU (30V)	C6016	×	○	×	○	×	×	×
FRONT END								
RF AGC	R6080	○	○	○	×	×	×	×
AS	C6022	×	×	×	×	×	×	×
SCL	R6020	1k	1k	1k	1k	1k	1k	1k
	C6020	×	×	×	×	×	×	×
SDA	R6021	1k	1k	1k	1k	1k	1k	1k
	C6021	×	×	×	×	×	×	×
MB (SW5V)	L6001	10μ	10μ	10μ	10μ	SHORT	SHORT	SHORT
	C6007	×	×	×	×	×	×	×
	C6008	×	×	×	×	×	×	×
LOCK	R6023	×	×	×	×	×	×	×
TU (30V)	C6005	×	×	×	×	×	×	×
	C6006	×	×	×	×	×	×	×
IF								
SW1	R6060	○	○	○	○	×	×	×
	C6027	×	×	×	×	×	×	×
SW2	R6061	○	○	○	○	○	○	×
	C6028	×	×	×	×	×	×	×
AUDIO OUT	R6038	×	×	×	×	×	×	×
	C6037	○	○	○	○	×	×	×
	B6034	×	×	×	×	○	×	○
	R6032	3.3k	3.3k	18k	0Ω	12k	×	0Ω
	R6033	1.5k	1.5k	18k	×	×	×	×
	C6032	○	○	×	×	×	×	×
AFT	C6024	×	×	×	×	×	×	×
	B6001	○	○	○	○	○	○	×
VIDEO OUT	Q6030	○	○	○	○	○	○	○
	R6030	1k	1k	1k	1k	3.3k	3.3k	3.3k
	B6030	×	×	×	×	×	×	×
AUDIO MUTE	Q6032	○	○	○	○	×	×	×
VIDEO MUTE	Q6031	○	○	○	○	×	×	×
	R6034	×	×	×	×	×	×	×
	C6033	0Ω	0Ω	0Ω	0Ω	×	×	×
	B6032	○	○	○	○	×	×	×
	B6033	×	×	×	×	×	×	×
DEMOD REG	"R6551,R6552," "D6551,Q6551"	×	×	×	×	○	×	○
	"C6551,C6552," C6554	×	×	×	×	×	×	×
	B6566	○	○	○	○	×	○	×
	C6553	○	○	○	○	×	○	×
	C6555	×	×	×	×	×	×	×
	L6501	SHORT	SHORT	3.3μ	SHORT	×	3.3μ	×
DEMOD OUT	"R6508,R6510"	0Ω	0Ω	0Ω	0Ω	0Ω	0Ω	0Ω
	"R6509,R6511"	×	×	×	×	×	×	×
	"C6519,C6520"	×	×	×	×	×	×	×
	"Q6501,Q6502"	×	×	×	×	×	×	×
	"B6510,B6511"	×	×	×	×	×	×	×
DEMOD OPTION	R6553	○	○	○	○	0Ω	0Ω	×
	B6552	×	×	×	×	×	×	○
	R6554	○	○	○	○	0Ω	0Ω	×
	B6554	×	×	×	×	×	×	○
DEMOD UNIT	CN6701	LPA10094 -04*	LPA10094 -04*	LPA10094 -05*	LPA10094 -07*	PB11076A -*	LPA10094 -06*	PB110B7A -*
OPTION	B6035	×	×	×	×	○	○	×

p10364001a_rev1

4.6 CONNECTION SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



0 3 MAIN [CONNECTION]

DIFFERENCE TABLE

○ : Used
× : Not used

	CN6102	B6101 B6108 C6101 CN6103	B7201 B7202 B7203 B7207 B7208	B7204 B7205 B7206	B7209	R7202 R7203 R7204 Q7201 L7201 C7202	B7251 B7253	B7252	B7255	B7256	CN901	R7252 R7253 C7251	R7251
VR1200/02,/58	×	×	×	×	×	○	○	×	○	×	○	○	○
HR-S9850EU/EK	×	×	×	×	×	○	○	×	○	×	○	○	○
VR1200/39	5-8pin	×	×	○	○	○	○	×	○	×	○	○	○
HR-S9850MS	1-10pin	×	○	○	×	○	○	×	○	×	○	○	○
HR-J880EU/EK/MS	×	×	×	×	×	○	○	×	×	○	×	×	○
VR1070/55,/75	×	×	×	×	×	×	×	×	×	×	○	×	×
VR820/55,/75	×	×	×	×	×	×	×	×	×	×	×	×	×
VR1070/50,/61	×	×	×	×	×	×	×	○	×	×	○	×	×
VR820/77	×	×	×	×	×	×	×	○	×	×	×	×	×
HR-VFG1	1-10pin	○	×	×	×	×	×	○	○	×	○	×	×

NAVI	CN7103
YES	○
NO	×

GR	CN1901	B7254
YES	○	×
NO	×	○

SVHS	CN501 CN502
YES	○
NO	×

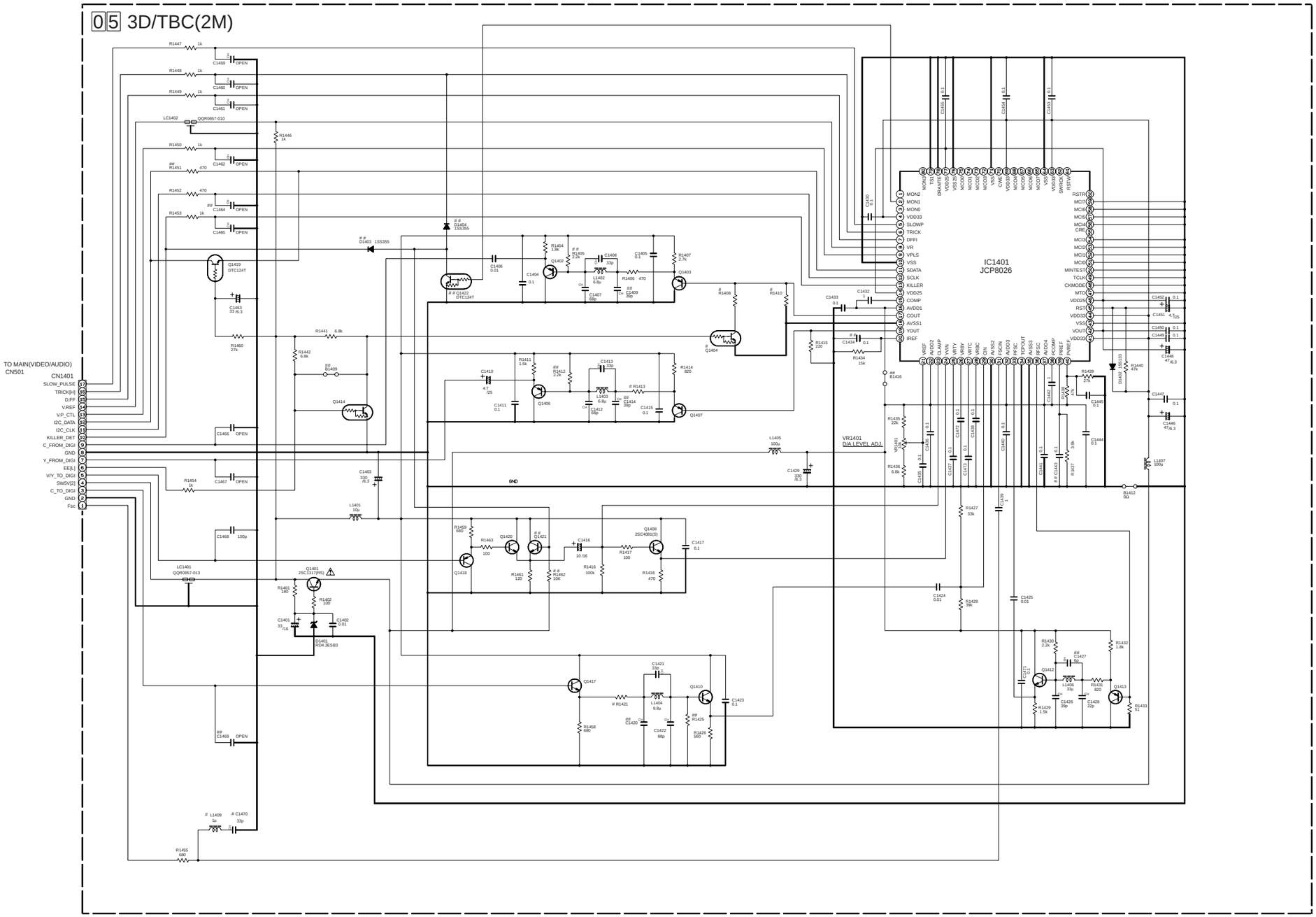
NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p20220001a_rev0

4.7 3D/TBC(2M) SCHEMATIC DIAGRAM

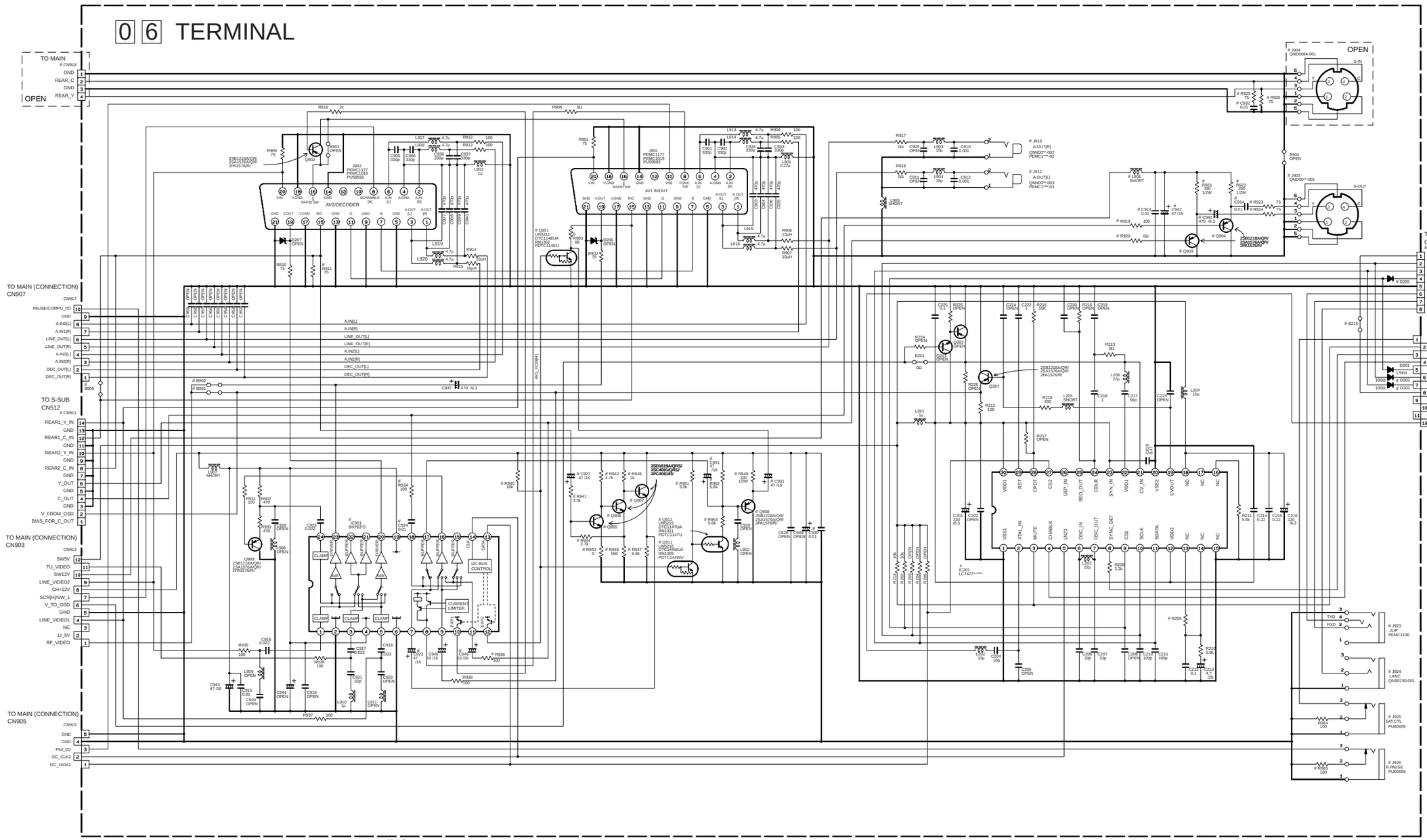
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p10354001a_rev0

4.8 TERMINAL SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE

○ : Used
× : Not used

SYMBOLS / MODELS	S-VHS "R903,R911,R919-R924,R939-R947" "R934,R948,R951-R953,C911,C914" "C933,C934,C941,C943,C944,C945" "Q909,Q912,L906,J903,B902,CN911"	B901 B905	S IN J904 R925 R926 CN918	OSD LANGUAGE IC201	R209	NAVIGATION D200 D203	D206 CN912	B215	J903	S OUT J912 J913	A.OUT J923	JLIP J924	LANC J925	SAT.CTL J926 R965	CH+IC IC901
V13S36 EU/EK	○	×	×	6-9791	12k	×	○	×	85	21/126	○	○	○	○	6
V13S36 MS	○	×	×	5-9750	5.1k	×	○	×	85	21/126	○	○	○	○	6
V13S26 EU(PHILIPS)	○	×	×	6-9791	12k	×	○	×	84	23/009	×	○	×	○	6
V13S25 EU/EK	○	×	×	6-9791	12k	×	○	×	84	23/009	○	○	○	○	6
V13S25 MS	○	×	×	5-9750	5.1k	×	○	×	84	23/009	○	○	○	○	6
"V13S2/S22 EU/EK,S21 EU"	○	×	×	6-9791	12k	○	×	×	84	23/009	×	×	○	○	6
V13S2 EU/EK(PHILIPS)	○	×	×	5-9750	5.1k	○	×	×	84	23/009	×	×	×	○	6
V13S2 MS	○	×	×	5-9750	5.1k	○	×	×	84	23/009	×	×	○	○	6
V13S2 MS(PHILIPS)	○	×	×	5-9750	5.1k	○	×	×	84	23/009	×	×	×	○	6
"V13S1 EU/EK,S11EU,S12EK"	○	×	×	6-9791	12k	○	×	×	84	23/009	×	×	○	×	6
V13S1 MS	○	×	×	5-9750	5.1k	○	×	×	84	23/009	×	×	○	×	6
V13D2 EU/EK	×	○	×	6-9791	12k	○	○	×	×	23/009	○	○	○	○	5
V13D2 MS	×	○	×	5-9750	5.1k	○	○	×	×	23/009	○	○	○	○	5
HR-S9850EU/EK	○	×	×	5-9750	5.1k	×	○	×	84	23/009	○	○	○	○	6
HR-S9850MS	○	×	×	5-9750	5.1k	×	○	×	84	23/009	○	○	○	○	6

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

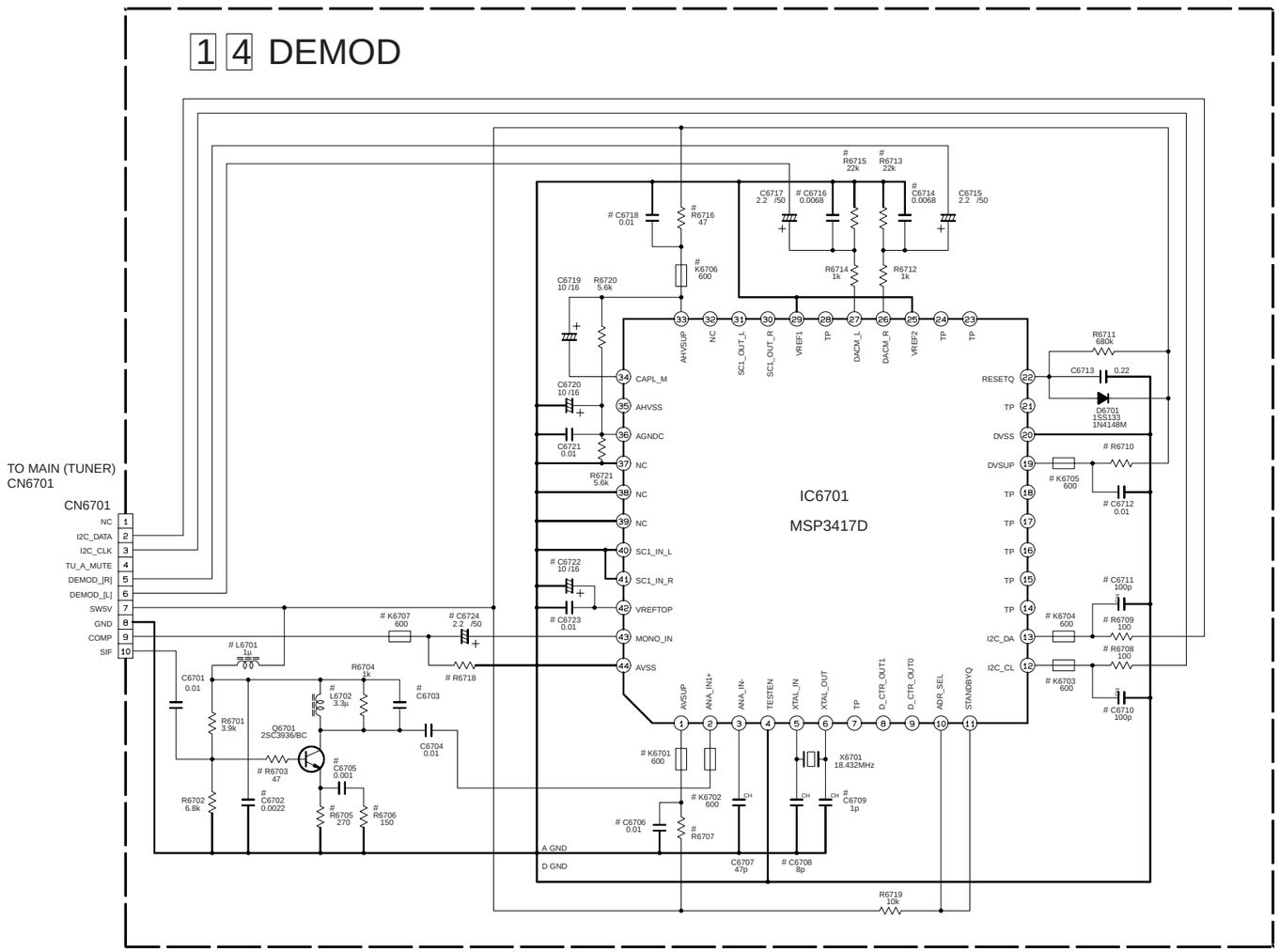
ELECTROLYTIC
CERAMIC
MY MYLER
NP NON POLAR

LAST NO			VACANT NO	
R	226	965	"201,206,207,219-223"	"927-930,948,950,954-963"
C	225	959	"203,221"	"949,950"
D	207	——	204	
Q	207	912	203-206	910
L	206	920		
B	215	905	202-214	
J	——	926		"905-911,914-922"
IC	201	901		
CN	——	918		"901-910,916"

p10275001a_rev0

4.9 DEMODULATOR SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

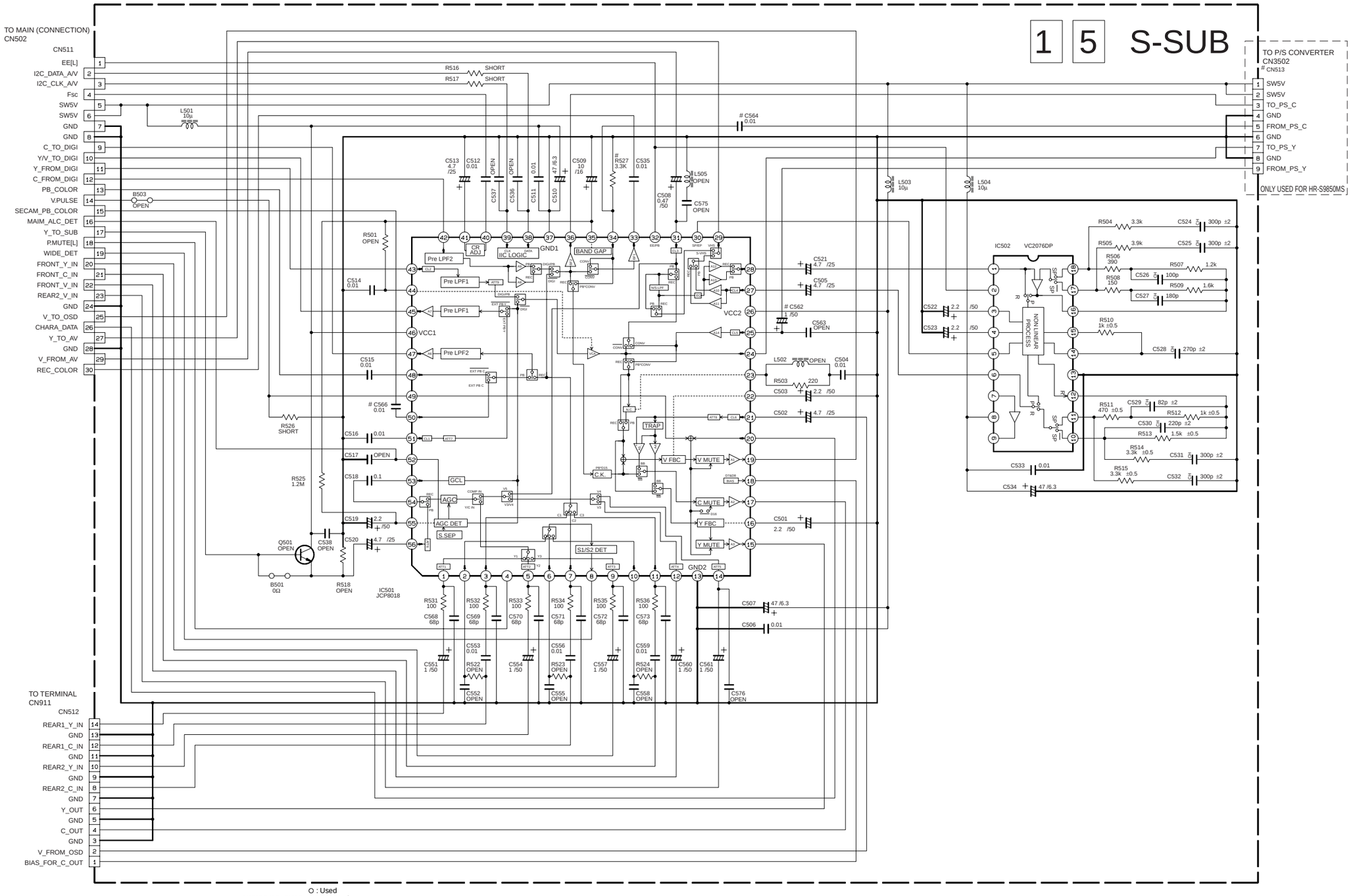
DIFFERENCE TABLE ○ : Used × : Not used

		V13			V14				
		FRANCE MS	EU/EK	ARC	EU/EK	FRANCE MS	KOREA	ARC 4SYSTEM	ARC 3SYSTEM
DEMOD PWB ASSY		LPA10094 -01*	LPA10094 -02*	LPA10094 -03*	LPA10094 -04*	LPA10094 -05*	LPA10094 -06*	LPA10094 -07*	LPA10094 -08*
PRE AMP	R6703	47	47	47	47	0	47	0	0
	R6705	270	270	100	270	270	270	270	270
	R6706	150	150	×	100	×	100	×	×
	C6702	0.0022	0.0022	0.0022	×	×	×	×	×
	C6703	×	×	220p	×	×	×	220p	180p
	C6705	0.001	0.001	×	0.001	×	0.001	×	×
	L6701	1μ	1μ	1μ	SHORT	SHORT	SHORT	SHORT	SHORT
	L6702	3.3μ	3.3μ	3.3μ	3.3μ	×	3.3μ	3.3μ	3.3μ
MONO IN	K6707	FE 600	×	×	×	FE 600	×	×	×
	C6724	0.22/50	×	×	×	0.22/50	×	×	×
	R6718	×	×	×	×	×	×	×	×
I2C-BUS	R6708,R6709	100	100	100	FE 600	FE 600	FE 600	FE 600	FE 600
	K6703,K6704	FE 600	FE 600	FE 600	1K	1K	1K	1K	1K
	C6710,C6711	×	×	×	×	×	×	×	×
ANALOG Vcc	R6707	22	47	47	FE 600	FE 600	FE 600	FE 600	FE 600
	K6701	FE 600	FE 600	FE 600	33	33	33	33	33
	C6706	×	×	×	×	×	×	×	×
DIGITAL Vcc	R6710	10	12	12	FE 600	FE 600	FE 600	FE 600	FE 600
	K6705	FE 600	FE 600	FE 600	10	10	10	10	10
	C6712	×	×	×	×	×	×	×	×
DAC Vcc	R6716	47	47	47	FE 600	FE 600	FE 600	FE 600	FE 600
	K6706	FE 600	FE 600	FE 600	47	47	47	47	47
	C6718	×	×	×	×	×	×	×	×
X'TAL	C6708	8p	8p	8p	7p	7p	7p	7p	7p
	C6709	1p	1p	1p	3p	3p	3p	3p	3p
DAC OUT	R6713,R6715	×	×	×	×	×	×	×	×
	C6714,C6716	0.0068	0.0068	0.0068	0.0022	0.0068	0.0022	0.0022	0.0022
VREF	C6722	×	×	×	×	×	×	×	×
	C6723	0.01	0.01	0.01	0.01	0.01	0.001	0.01	0.01

p20162001a_rev3

4.10 S-SUB SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



# DIFFERENCE TABLE	CN513 C562 C564 C566	R527
MS	○	×
OTHERS	×	○

○ : Used
× : Not used

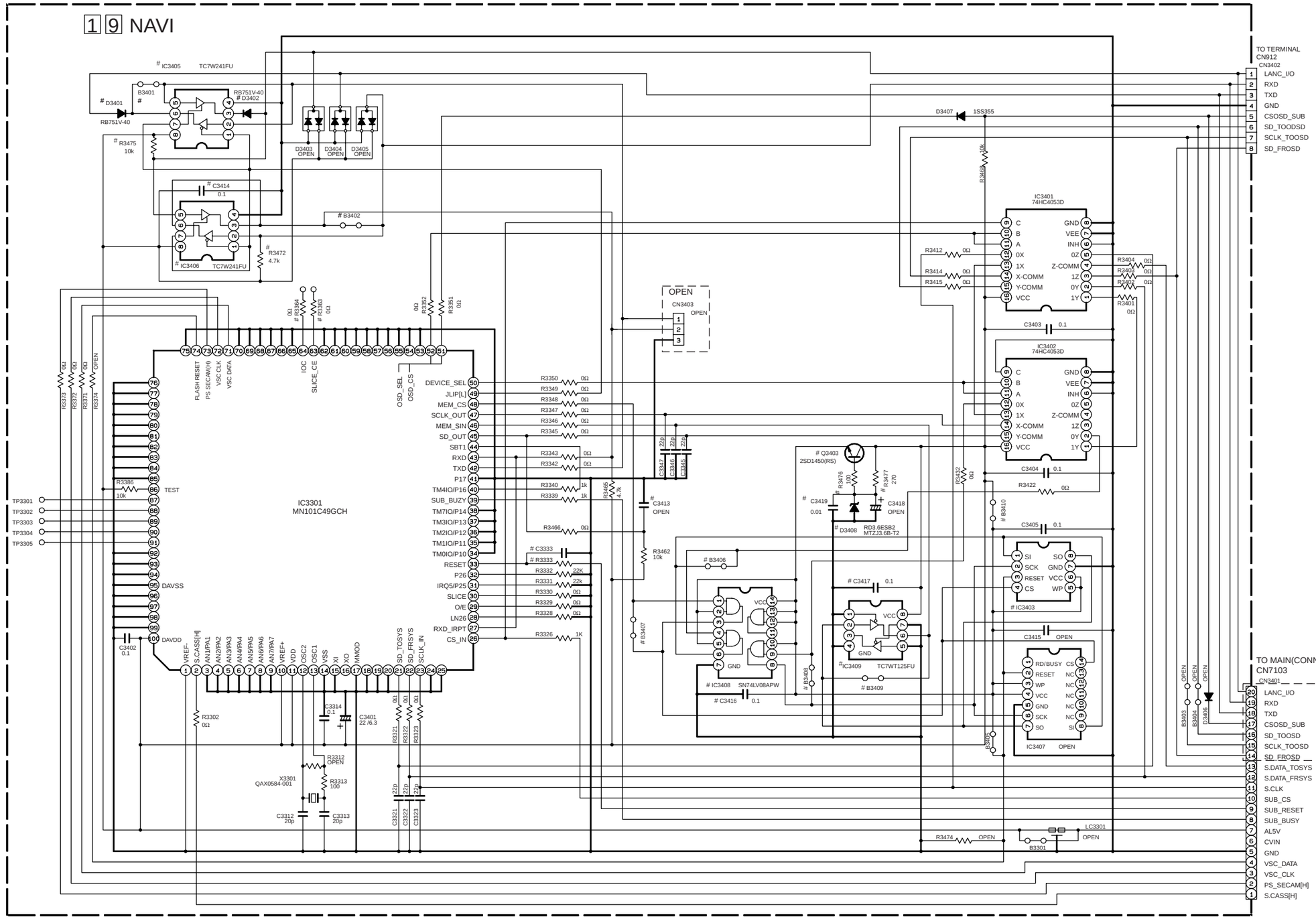
NOTES : UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p20222001a_rev0

4.11 NAVIGATION SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE ○: Used ×: Not used

IC3403	AT45D011-SC	AT45DB011-SC
IC3408 IC3409 Q3403 D3408 R3476 R3477 C3416 C3417 C3419	×	○
B3406-B3410		×
R3333	1k	330
C3333	0.1μF	4.7kΩ

LANC	WITH LANC	WITHOUT LANC
IC3405,C3414 IC3406,D3402 R3472,R3475	○	×

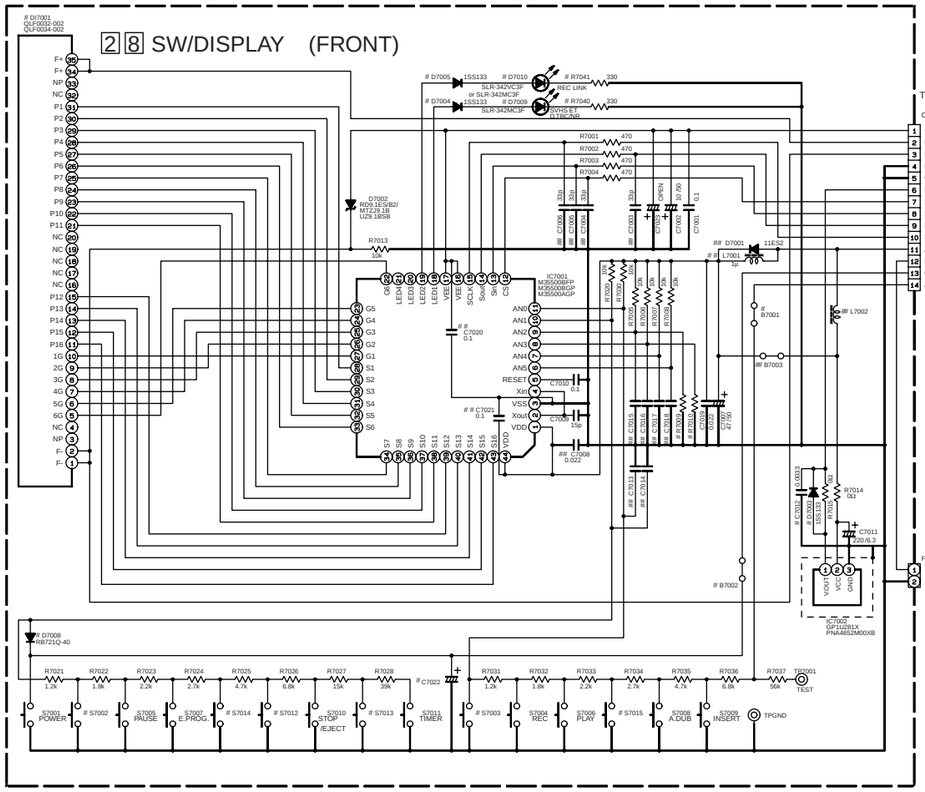
JLIP	WITH JLIP	WITH JLIP WITHOUT LANC
D3401	○	○
B3401 B3402	×	○

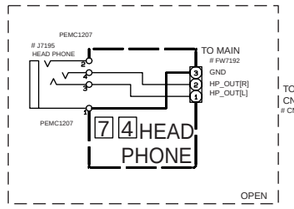
NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

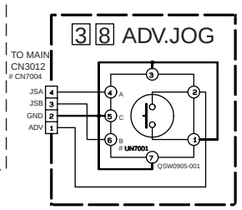
p20167002a_rev0.1

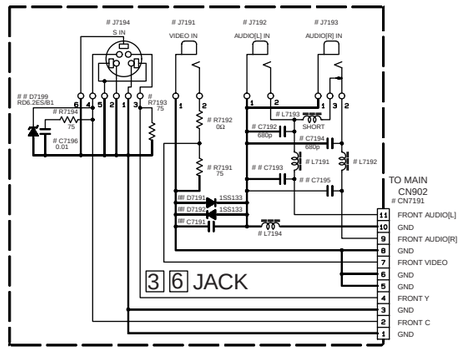
4.12 SW/DISPLAY, REC SAFETY, JACK AND ADV.JOG SCHEMATIC DIAGRAMS

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.









DIFFERENCE TABLE ○: Used ×: Not used

	FDP	OPTION								IR DETECT		LED		DISP OFF		ADVJOG	HEAD PHONE	FRONT RCA INPUT					FRONT RCA INCE			FRONT S INPUT			
	D7001	S7002	S7003	S7012	S7013	S7014	S7015	R7009	R7010	R7015	C7012 D7003	D7005 D7010 R7041	D7004 D7009 R7040	B7002 S7008	C7022	UN7001 CN7004 B7001	FW7192 J7195	CN7191	R7191	J7191	J7192	J7193	L7191 L7192	L7193 L7194	C7192 C7194	R7194	R7193	C7196	J7194
V14D25 EU/EK/MS	32or34	MARK	ERASE	DISPLAY	SAT TIMER	C.RESET	SYN.EDIT	×	×	○	×	○	×	×	×	○	×	7-11PIN	×	418-004	418-003	419-002	100	SHORT	○	×	×	×	×
V14S35 EU/EK/MS	32or34	MARK	ERASE	SVHS ET	SAT TIMER	C.RESET	SYN.EDIT	×	×	○	×	○	○	×	×	○	×	1-11PIN	×	371-004	371-003	372-002	100	SHORT	○	×	×	×	085-001
V14S78 D	32or34	CH-	CH+	TBC 3D	BS TIMER	SP/EP/SEP	HEAD PH.	×	×	○	×	○	○	○	×	○	○	1-11PIN	○	371-004	371-003	372-002	SHORT	SHORT	×	○	○	○	085-001

DIFFERENCE TABLE

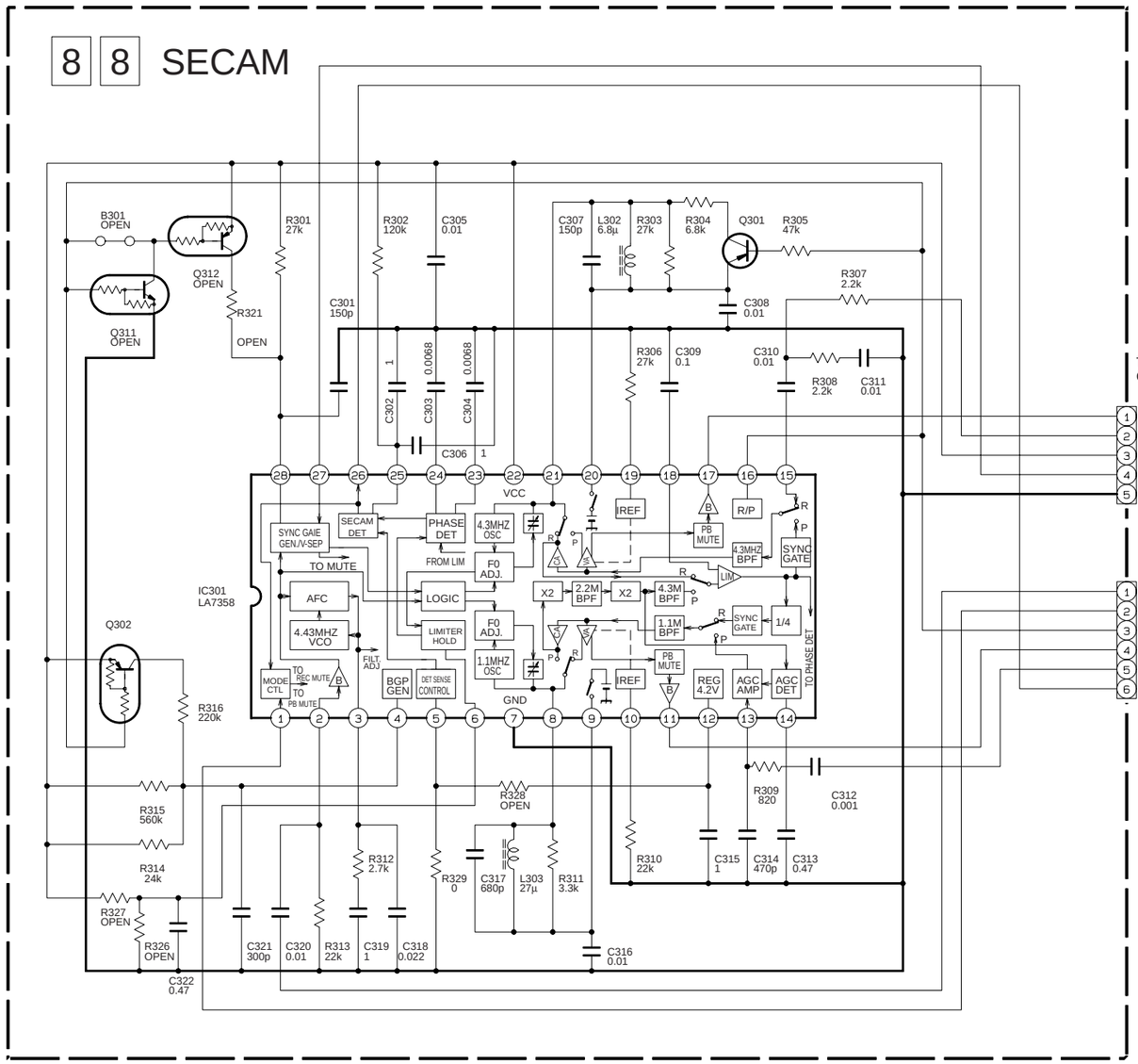
	ESD						CE			
	D7001	C7002 C7004 C7005 C7006	C7013 C7014	C7015 C7016 C7017 C7018	C7008 C7020 C7021	D7191 D7192 C7191	D7199	C7193 C7195	L7001	L7002	B7003
V14D25 EU/EK/MS	×	×	×	×	×	×	×	×	○	×	○
V14S35 EU/EK/MS	×	×	×	×	×	×	×	×	○	×	×
V14S78 D	×	×	×	×	×	×	○	×	SHORT	SHORT	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

LAST NO.		VACANT NO.
R	7194	7011, 7012, 7016-7019, 7029, 7038, 7039, 7042-7190,
C	7196	7024-7190,
D	7199	7006, 7007, 7011-7190, 7193-7198
J	7195	
L	7194	7003-7190,
S	7041	7016-7040,
B	7003	

4.13 SECAM SCHEMATIC DIAGRAM
[Only used for HR-S9850MS]

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

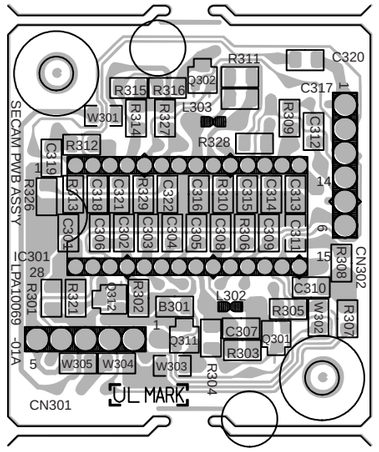


NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

4.14 SECAM CIRCUIT BOARD
[Only used for HR-S9850MS]

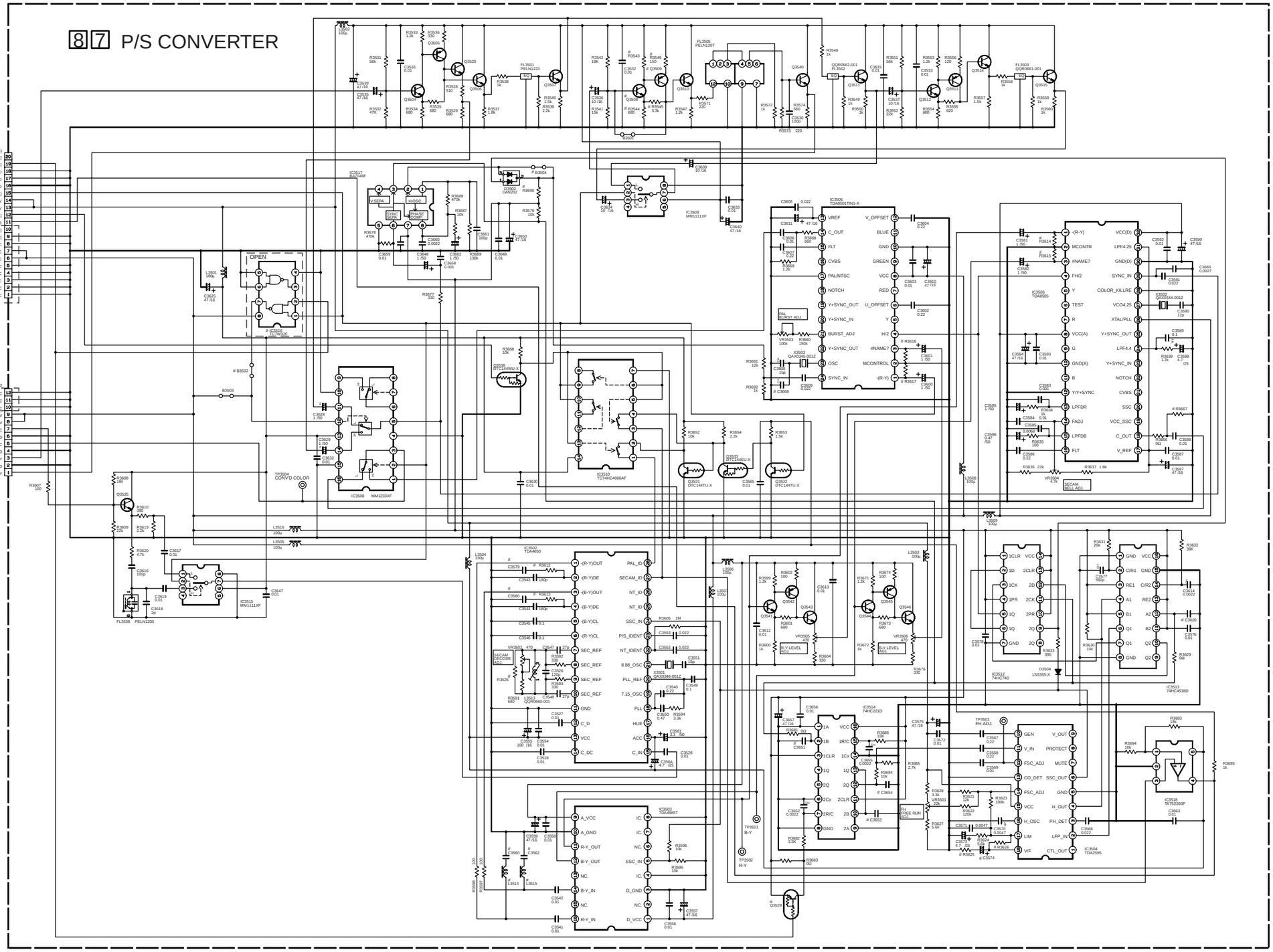
<88> SECAM
LPB10069-001A



p30054001a_rev0

4.15 P/S CONVERTER SCHEMATIC DIAGRAMS
[Only used for HR-S9850MS]

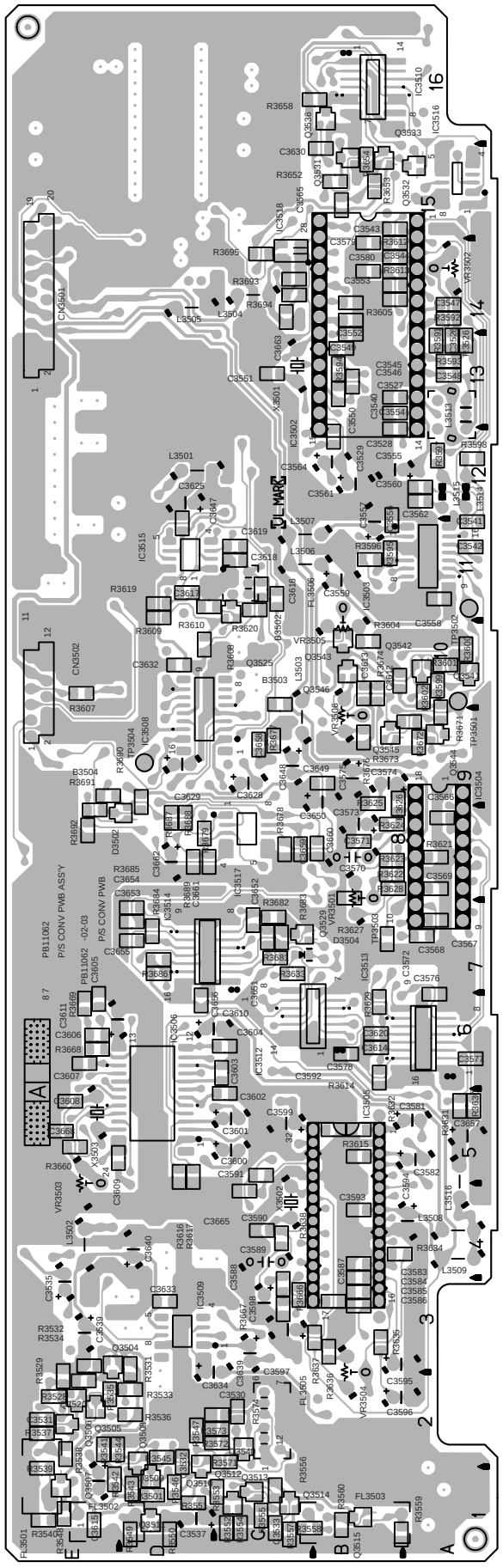
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



p10206001a_rev0

4.16 P/S CONVERTER CIRCUIT BOARD
[Only used for HR-S9850MS]

<87> P/S CONVERTER
PB11062-02-03



COMPONENT PARTS LOCATION GUIDE <P/S CONVERTER>

REF.NO.	LOCATION		
CAPACITOR			
C3521	A	D	16C
C3522	A	D	15C
C3523	A	D	15D
C3524	A	D	16E
C3525	A	D	14D
C3526	B	C	13A
C3527	B	C	13B
C3528	B	C	12B
C3529	B	C	12B
C3530	B	C	2C
C3531	B	C	2E
C3532	B	C	2D
C3533	B	C	1C
C3535	A	D	3E
C3536	A	D	1E
C3537	A	D	1D
C3538	A	D	2D
C3539	A	D	3E
C3540	B	C	13B
C3541	B	C	12A
C3542	B	C	11A
C3543	B	C	15B
C3544	B	C	14B
C3545	B	C	14B
C3546	B	C	14B
C3547	B	C	14A
C3548	B	C	13A
C3549	B	C	13B
C3550	B	C	13B
C3551	B	C	13C
C3552	B	C	13B
C3553	B	C	14B
C3554	B	C	13B
C3555	A	D	12B
C3556	B	C	12B
C3557	A	D	11B
C3558	B	C	11A
C3559	A	D	11B
C3560	B	C	12A
C3561	A	D	12B
C3562	B	C	12A
C3564	A	D	12B
C3565	B	C	15B
C3566	B	C	8A
C3567	B	C	7A
C3568	B	C	7A
C3569	B	C	8A
C3570	A	D	8B
C3571	B	C	8B
C3572	B	C	7B
C3573	A	D	8B
C3574	A	D	9B
C3575	A	D	9B
C3576	B	C	7A
C3577	B	C	6A
C3578	B	C	6B
C3579	B	C	14B
C3580	B	C	14B
C3581	A	D	5A
C3582	A	D	5A
C3583	B	C	4B
C3584	A	D	4B
C3585	B	C	3B
C3586	B	C	3B
C3587	B	C	3B
C3588	B	C	3C
C3589	A	D	4C
C3590	B	C	4C
C3591	B	C	5C
C3592	B	C	5B
C3593	B	C	4B
C3594	A	D	4A
C3595	A	D	3B
C3596	A	D	2B
C3597	A	D	3C
C3598	A	D	3C
C3599	A	D	5C
C3600	A	D	5C
C3601	A	D	5C
C3602	B	C	5C
C3603	B	C	6C
C3604	B	C	6C
C3605	B	C	6E
C3606	B	C	6E
C3607	B	C	6E
C3608	B	C	5E
C3609	B	C	5E
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C3611	A	D	6E
C3612	B	C	10B
C3613	B	C	10B
C3614	B	C	6B
C3615	B	C	1E
C3616	B	C	11C
C3617	B	C	11D
C3618	B	C	11C
C3619	B	C	11C
C3620	B	C	6B
C3625	A	D	12D
C3626	A	D	10C
C3627	A	D	10C
C3628	A	D	9C
C3629	A	D	9D
C3630	B	C	15B
C3632	B	C	10D
C3633	B	C	3D
C3634	A	D	3D
C3635	A	D	4D
C3636	A	D	4D
C3637	A	D	3D
C3638	A	D	3D
C3639	A	D	3C
C3640	A	D	4D
C3643	A	D	11E
C3644	A	D	13E
C3645	A	D	11E
C3646	A	D	12E
C3647	B	C	11D
C3648	A	D	9C
C3649	B	C	9B
C3650	A	D	9B
C3651	B	C	7C
C3652	B	C	7C
C3653	B	C	7D
C3654	B	C	7D
C3655	B	C	7D
C3656	B	C	6D
C3657	A	D	5A
C3658	B	C	9C
C3659	B	C	8C
C3660	B	C	8B
C3661	B	C	8D
C3662	A	D	8D
C3663	B	C	14C
C3665	B	C	4C
C3668	B	C	5E
CONECTOR			
CN3501	A	D	13E
CN3502	A	D	9E
DIODE			
D3502	B	C	8D
D3504	B	C	7C
IC			
IC3501	A	D	17D
IC3502	A	D	15A
IC3503	B	C	11A
IC3504	A	D	9A
IC3505	A	D	5B
IC3506	B	C	5D
IC3508	B	C	10D
IC3509	B	C	3D
IC3510	B	C	16B
IC3511	A	D	11E
IC3512	B	C	6B
IC3513	B	C	6A
IC3514	B	C	7D
IC3515	B	C	11D
IC3516	B	C	15A
IC3517	B	C	8C
IC3518	B	C	14C
COIL			
L3501	A	D	12D
L3502	A	D	4E
L3503	A	D	9C
L3504	A	D	14C
L3505	A	D	14D
L3506	A	D	11C
L3507	A	D	11C
L3508	A	D	4A
L3509	A	D	4A
L3510	A	D	12E
L3511	A	D	16C
L3512	A	D	16E
L3513	A	D	13A
L3514	A	D	12A
L3515	A	D	12A
L3516	A	D	5A
TRANSISTOR			
Q3504	B	C	3E
Q3505	B	C	2E
Q3506	B	C	2E
Q3507	B	C	1E
Q3508	B	C	2D
Q3509	B	C	1D
Q3510	B	C	2D
Q3511	B	C	1D
Q3512	B	C	1C
Q3513	B	C	1C
Q3514	B	C	1C
Q3515	B	C	1B
Q3520	B	C	2E
Q3525	B	C	11C
Q3529	B	C	7C
Q3531	B	C	15B
Q3532	B	C	15A
Q3533	B	C	15B
Q3536	B	C	16B
Q3540	B	C	2C
Q3541	B	C	10A
Q3542	B	C	10A
Q3543	B	C	10B
Q3544	B	C	9A
Q3545	B	C	9B
Q3546	B	C	10B
RESISTOR			
R3526	B	C	13A
R3528	B	C	2E
R3529	B	C	2E
R3531	B	C	3D
R3532	B	C	3E
R3533	B	C	2D
R3534	B	C	2E
R3535	B	C	2E
R3536	B	C	2D
R3537	B	C	2E
R3538	B	C	2E
R3539	B	C	1E
R3540	B	C	1E
R3541	B	C	2E
R3542	B	C	1E
R3543	B	C	1D
R3544	B	C	2E
R3545	B	C	2D
R3546	B	C	1D
R3547	B	C	2D
R3548	B	C	1E
R3549	B	C	1D
R3550	B	C	1D
R3551	B	C	1D
R3552	B	C	1C
R3553	B	C	1C
R3554	B	C	1C
R3555	B	C	1C
R3556	B	C	1C
R3557	B	C	1C
R3558	B	C	1B
R3559	B	C	1B
R3560	B	C	1B
R3571	B	C	2C
R3572	B	C	2C
R3573	B	C	2C
R3574	B	C	2C
R3591	B	C	13A
R3592	B	C	14A
R3593	B	C	13A
R3594	B	C	13B
R3595	B	C	11B
R3596	B	C	11B
R3597	B	C	12A
R3598	B	C	12A
R3599	B	C	10A
R3600	B	C	10A
R3601	B	C	10A
R3602	B	C	10A
R3604	B	C	10B
R3605	B	C	14B
R3607	B	C	10E
R3608	B	C	10D
R3609	B	C	10D
R3610	B	C	11D
R3612	B	C	14B
R3613	B	C	14B
R3614	B	C	5B
R3615	B	C	5B
R3616	B	C	5D
R3617	B	C	5D
R3619	B	C	11D
R3620	B	C	11C
R3621	B	C	8A
R3622	B	C	8B
R3623	B	C	8B
R3624	B	C	8B
R3625	B	C	9B
R3626	B	C	9B
R3627	B	C	8B
R3628	B	C	8B
R3629	B	C	6B
R3630	B	C	5A
R3631	B	C	5A
R3632	B	C	6B
R3633	B	C	7C
R3634	B	C	4B
R3635	B	C	3B
R3636	B	C	3B
R3637	B	C	3B
R3638	B	C	4C
R3652	B	C	15B
R3653	B	C	15B
R3654	B	C	15B
R3658	B	C	16B
R3660	B	C	5E
R3666	B	C	3C
R3667	B	C	3C
R3668	B	C	6E
R3669	B	C	6E
R3671	B	C	9A
R3672	B	C	9A
R3673	B	C	9A
R3674	B	C	10B
R3676	B	C	9B
R3677	B	C	9C
R3678	B	C	8C
R3679	B	C	8D
R3681	B	C	7C
R3682	B	C	7C
R3683	B	C	7C
R3684	B	C	7D
R3685	B	C	7D
R3686	B	C	7D
R3687	B	C	8D
R3688	B	C	8D
R3689	B	C	8D
R3690	B	C	9D
R3691	B	C	8E
R3692	B	C	8E
R3693	B	C	14C
R3694	B	C	14C
R3695	B	C	14C
TEST POINT			
TP3501	A	D	10A
TP3502	A	D	11A
TP3503	B	C	7B
TP3504	A	D	9D
OTHER			
FL3501	A	D	2E
FL3502	A	D	1E
FL3503	A	D	1C
FL3504	A	D	1A
FL3505	A	D	2C
FL3506	A	D	11C
PC016	B	C	7D
PC017	B	C	6B
PC018	B	C	6A
PC019	B	C	16B
VR3501	A	D	8B
VR3502	A	D	14A
VR3503	A	D	5E
VR3504	A	D	3B
VR3505	A	D	10B
VR3506	A	D	9B
X3501	A	D	13C
X3502	A	D	4C
X3503	A	D	5E

COMPONENT PARTS LOCATION GUIDE <MAIN>

REF.NO.	LOCATION		
CAPACITOR			
C1	B	C	14I
C2	B	C	14I
C3	B	C	14I
C4	B	C	15J
C5	A	D	13J
C6	B	C	12K
C7	B	C	14J
C8	B	C	15J
C9	A	D	14M
C10	B	C	14L
C11	B	C	15L
C12	B	C	15L
C13	B	C	15L
C14	B	C	15L
C15	B	C	14M
C16	B	C	14M
C17	A	D	12M
C18	A	D	13M
C19	A	D	13M
C20	A	D	13M
C21	B	C	12M
C22	A	D	12M
C23	B	C	12M
C24	B	C	12N
C25	B	C	11M
C26	B	C	11N
C27	B	C	11N
C28	A	D	11M
C29	B	C	11N
C30	B	C	11N
C31	A	D	11N
C32	A	D	11M
C33	A	D	9N
C34	B	C	9N
C35	B	C	10M
C36	A	D	10N
C37	B	C	10M
C38	A	D	9M
C39	B	C	10M
C40	A	D	9M
C41	B	C	8M
C42	B	C	7M
C44	B	C	13G
C45	A	D	10L
C51	A	D	16N
C52	A	D	13M
C53	B	C	8N
C54	B	C	8N
C55	B	C	10N
C56	B	C	9N
C59	B	C	14L
C60	A	D	14H
C61	B	C	13L
C62	B	C	15M
C63	B	C	16M
C64	B	C	11O
C65	A	D	13K
C69	B	C	13H
C70	B	C	13H
C71	B	C	14G
C72	B	C	15G
C73	B	C	15H
C74	B	C	14H
C75	B	C	15G
C76	B	C	15H
C77	B	C	16H
C78	B	C	16H
C79	B	C	12N
C80	B	C	12N
C81	B	C	13N
C84	B	C	15L
C91	B	C	12L
C92	B	C	12N
C93	B	C	14G
C94	B	C	12O
C95	B	C	12O
C96	B	C	10O
C98	A	D	13M
C103	B	C	15G
C104	B	C	12O
C105	B	C	12O
C106	B	C	15M
C107	B	C	18H
C108	B	C	11O
C109	B	C	15M
C110	B	C	15M
C112	B	C	11N
C114	B	C	11O
C120	A	D	10M
C136	B	C	14M
C145	B	C	14N
C146	B	C	11N
C401	B	C	16I
C402	B	C	16J
C403	B	C	16K
C404	B	C	16J
C405	B	C	16I
C406	B	C	16J
C407	B	C	16J
C409	A	D	16J
C2001	A	D	8L
C2002	A	D	10K
C2003	A	D	12J
C2004	B	C	12J
C2005	A	D	14J
C2006	B	C	13J
C2007	A	D	14J
C2008	A	D	13K
C2009	B	C	14K
C2010	B	C	13K
C2011	A	D	14K
C2012	A	D	13L
C2013	B	C	13K
C2016	B	C	13K
C2017	A	D	14J
C2021	B	C	14K
C2051	B	C	18K
C2052	A	D	7K
C2053	B	C	6K
C2054	B	C	7K
C2055	A	D	6K
C2061	A	D	21F
C2062	B	C	21F
C2063	B	C	21F
C2064	A	D	21G
C2201	B	C	9M
C2202	B	C	10L
C2203	A	D	8M
C2204	A	D	9N
C2205	A	D	8M
C2206	A	D	9M
C2207	A	D	8M
C2208	A	D	9L
C2209	A	D	9L
C2210	A	D	10K
C2211	A	D	8L
C2212	A	D	8L
C2213	A	D	9K
C2214	A	D	8K
C2215	A	D	10K
C2216	A	D	10J
C2217	A	D	10J
C2218	A	D	11J
C2219	A	D	10J
C2220	A	D	10I
C2221	B	C	11I
C2222	A	D	11I
C2223	A	D	11I
C2224	B	C	11J
C2225	A	D	11I
C2226	A	D	11J
C2227	B	C	12I
C2228	B	C	9H
C2229	B	C	10K
C2230	B	C	10J
C2231	B	C	9M
C2232	A	D	9K
C2233	A	D	9J
C2234	A	D	9K
C2235	A	D	12H
C2236	A	D	12H
C2237	A	D	9K
C2238	A	D	8K
C2251	A	D	12I
C2252	B	C	12J
C2253	B	C	12I
C2254	B	C	12I
C2255	B	C	11I
C2256	A	D	13I
C2401	A	D	19C
C2402	A	D	19C
C2403	A	D	20C
C2404	B	C	19D
C2405	B	C	19C
C2406	A	D	20B
C2407	A	D	20C
C2408	B	C	20C
C2409	B	C	20C
C2410	A	D	19B
C2411	B	C	20C
C3001	B	C	8J
C3002	B	C	7J
C3003	A	D	7J
C3004	B	C	7H
C3007	B	C	5E
C3008	B	C	21E
C3010	A	D	1B
C3011	A	D	1B
C3012	A	D	4B
C3014	A	D	6A
C3015	B	C	8F
C3016	B	C	9D
C3017	B	C	8C
C3018	B	C	8C
C3019	B	C	8C
C3020	B	C	9C
C3021	B	C	9C
C3022	B	C	17C
C3024	B	C	11C
C3025	A	D	11C
C3026	B	C	11C
C3027	B	C	12C
C3028	B	C	10B
C3029	B	C	11B
C3030	B	C	13D
C3031	B	C	12C
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C3033	B	C	10F
C3034	B	C	12C
C3035	B	C	12C
C3036	B	C	12C
C3037	B	C	12C
C3038	B	C	13D
C3039	B	C	13D
C3040	A	D	8D
C3041	B	C	11C
C3042	A	D	5B
C3043	B	C	8C
C3049	B	C	3A
C3050	B	C	11D
C3054	B	C	12C
C3602	B	C	15F
C3603	B	C	15E
C3604	B	C	15E
C3652	B	C	17C
C3653	B	C	16C
C3654	B	C	16C
C4001	A	D	6B
C4002	B	C	9E
C4003	B	C	9F
C4004	B	C	10F
C4005	B	C	9F
C4006	B	C	9F
C4007	B	C	9F
C4008	B	C	9F
C4009	B	C	9F
C4010	B	C	7E
C4011	B	C	11F
C4012	B	C	11F
C4013	B	C	10F
C4014	B	C	10F
C4015	B	C	10F
C4016	B	C	10F
C4017	B	C	9F
C5001	A	D	2O
C5002	A	D	4N
C5003	A	D	4P
C5004	A	D	1J
C5006	A	D	3M
C5101	A	D	2M
C5102	A	D	3K
C5103	A	D	2K
C5104	A	D	3L
C5105	A	D	4M
C5106	A	D	3L
C5107	A	D	1K
C5201	A	D	1G
C5202	A	D	2G
C5203	A	D	1G
C5204	A	D	4H
C5205	A	D	2H
C5206	A	D	3G
C5207	A	D	2F
C5208	A	D	1E
C5209	A	D	3G
C5211	A	D	5M
C5212	A	D	4J
C5213	A	D	1H
C5301	A	D	1E
C5302	A	D	2E
C5303	A	D	3E
C5304	A	D	3D
C5305	B	C	1G
C5306	A	D	3C
C5307	A	D	2C
C5308	A	D	2F
C5309	A	D	2E
C5310	A	D	3D
C6005	A	D	21M
C6006	B	C	22M
C6007	A	D	20M
C6008	B	C	21M
C6012	A	D	21O
C6013	B	C	22O
C6014	B	C	22P
C6016	B	C	21O
C6020	B	C	22N
C6021	B	C	22N
C6022	B	C	22N
C6023	B	C	20M
C6024	B	C	22K
C6027	B	C	21L
C6028	B	C	22L
C6032	B	C	21K
C6033	B	C	22J
C6037	B	C	22L
C6052	B	C	22O
C6053	B	C	22P
C6054	B	C	22P
C6055	B	C	22O
C6101	A	D	21B
C6519	B	C	19N
C6520	B	C	18N
C6551	A	D	22P
C6552	B	C	22O
C6553	A	D	19L
C6554	B	C	22O
C6555	B	C	19M
C7202	A	D	19O
C7251	B	C	21B
CONNECTOR			
CN1	A	D	15K
CN301	A	D	20J
CN302	A	D	18H
CN501	A	D	7O
CN502	A	D	18O
CN901	A	D	22A
CN902	A	D	20A
CN903	A	D	14P
CN904	A	D	19P
CN905	A	D	16P
CN906	A	D	20C
CN907	A	D	8P
CN1901	A	D	22C
CN2001	A	D	14L
CN2002	A	D	20G
CN2051	A	D	18L
CN2052	A	D	6K
CN3001	A	D	6L
CN3002	A	D	8J
CN3003	A	D	8H
CN3004	A	D	10A
CN3011	A	D	3A
CN3012	A	D	2C
CN3901	A	D	14C
CN5001	A	D	1P
CN6102	A	D	21C
CN6103	A	D	21H
CN6701	A	D	18M
CN7103	A	D	22E
DIODE			
D1	B	C	19L
D3	B	C	10O
D4	A	D	14M
D5	B	C	14M
D6	A	D	7N
D8	A	D	12N
D2001	B	C	18I
D2201	A	D	8M
D2202	A	D	7M
D3001	A	D	13D
D3002	A	D	5D
D3003	A	D	3C
D3004	A	D	4A
D3005	A	D	4A
D3006	A	D	5J
D3007	B	C	7D
D3008	B	C	7D
D3011	A	D	2B
D3012	A	D	1C
D4001	B	C	11E
D4002	B	C	11F
D5001	B	C	3N
D5101	A	D	1L
D5102	A	D	2L
D5103	A	D	2K
D5104	A	D	4N
D5201	A	D	1I
D5202	A	D	4H
D5203	A	D	4I
D5204	A	D	3I
D5205	A	D	3I
D5206	A	D	2H
D5207	A	D	2H
D5208	A	D	3G
D5209	A	D	3H
D5210	A	D	4I
D5211	A	D	1I
D5212	A	D	2I
D5213	A	D	5L
D5214	A	D	4I
D5301	A	D	3H
D5302	A	D	2D
D5303	A	D	1E
D5304	A	D	1F
D5305	A	D	4G
D5306	A	D	2D
D5307	A	D	3F
D5308	A	D	2F
D5309	A	D	3C
D5310	A	D	2E
D5314	A	D	3G
D5315	A	D	5G
D5316	A	D	3F
D5317	A	D	7H
D6002	A	D	22L
D6551	A	D	22O
IC			
IC1	B	C	11L
IC2	B	C	16H
IC2201	B	C	9K
IC2401	B	C	19C
IC3001	B	C	10D
IC3002	B	C	12C
IC3003	B	C	16C
IC3004	A	D	7J
IC3005	A	D	17B
IC3601	B	C	15F
IC3651	B	C	17D
IC5101	A	D	2L
IC5301	A	D	1D
COIL			
L1	A	D	13I
L2	A	D	15L
L3	A	D	14N
L4	A	D	11N
L5	A	D	9M
L11	A	D	11N
L12	A	D	11M
L13	A	D	11O
L14	A	D	12N
L15	A	D	13H
L17	A	D	15G
L18	A	D	15H
L19	A	D	14H
L20	A	D	16L
L22	A	D	12M
L24	A	D	15M
L25	A	D	18H
L26	A	D	18H
L27	A	D	11O
L28	A	D	15M
L401	A	D	16J
L402	A	D	19G
L2001	A	D	13J
L2251	A	D	13I
L2252	A	D	11I
L3001	A	D	6J
L3011	A	D	7J
L3012	A	D	7J
L5201	A	D	2G
L5202	A	D	1F
L6001	A	D	20N
L6002	A	D	21P
L6003	A	D	21O
L6004	A	D	21P
L6005	A	D	20N
L6032	A	D	22J
L6050	A	D	22N
L6501	A	D	19M
L7201	A	D	19O
TRANSISTOR			
Q1	B	C	15I
Q2	B	C	15I
Q3	B	C	15J
Q4	B	C	15J
Q5	B	C	13L
Q7	B	C	15G
Q8	B	C	15H
Q9	B	C	15H
Q10	B	C	8N
Q11	B	C	9N
Q12	B	C	8N
Q13	B	C	8N
Q14	B	C	15G
Q16	B	C	16L
Q17	B	C	16L
Q21	B	C	12O
Q24	B	C	7N
Q25	B	C	9N
Q26	B	C	9N
Q31	B	C	19I
Q32	B	C	13M
Q34	B	C	12N
Q35	B	C	13M
Q37	B	C	13N
Q38	B	C	15M
Q39	B	C	11O
Q41	B	C	11O
Q401	B	C	16J
Q402	B	C	16J
Q403	B	C	16I
Q404	B	C	18G
Q405	B	C	19G
Q2001	B	C	14L
Q2002	B	C	14K
Q2003	B	C	14L
Q2004	B	C	14K
Q2005	B	C	14J
Q2006	B	C	14K
Q2011	B	C	14K
Q2051	B	C	6K
Q2052	B	C	18H
Q2053	B	C	18H
Q2054	B	C	19H
Q2061	B	C	21G
Q2062	B	C	19H
Q2251	B	C	10I
Q2252	B	C	10I
Q3001	B	C	7J
Q3002	A	D	5E
Q3003	A	D	20E
Q3004	B	C	3C
Q3005	B	C	4B
Q3007	B	C	7D
Q3009	B	C	7D
Q3010	B	C	14E
Q3011	B	C	14F
Q3901	B	C	14C
Q4001	B	C	8E
Q4002	B	C	10F
Q4003	B	C	9F
Q5101	A	D	3L
Q5102	B	C	3L
Q5103	B	C	4M
Q5301	A	D	3F
Q5302	B	C	3F
Q5303	A	D	2C
Q5304	A	D	2E
Q5305	B	C	3E
Q5306	A	D	3F
Q5310	B	C	3C
Q5311	B	C	4F
Q5312	A	D	1C
Q5318	B	C	2C
Q5320	A	D	4G
Q5321	B	C	4F
Q5322	B	C	4D
Q6030	B	C	22I
Q6031	B	C	22J
Q6032	B	C	21J
Q6501	B	C	19N
Q6502	B	C	19N
Q6551	A	D	22O
Q7201	A	D	20P
RESISTOR			
R1	B	C	14L
R2	B	C	14L
R3	B	C	15L
R4	B	C	12N
R5	B	C	12N
R6	B	C	11M
R7	B	C	10N
R8	B	C	8N
R9	B	C	8M
R21	B	C	14H
R22	B	C	14G
R23	B	C	14L
R24	B	C	14G
R25	B	C	15G
R26	B	C	14G
R27	B	C	15G
R28	B	C	14H
R29	B	C	15G
R30	B	C	15H
R31	B	C	15H
R32	B	C	15G
R33	B	C	16L
R34	B	C	16L
R35	B	C	15L
R36	B	C	8N
R37	B	C	10N
R38	B	C	10N
R39	B	C	9N
R40	B	C	8N
R41	B	C	8N
R42	B	C	8N
R43	B	C	8N
R44	B	C	7N
R45	B	C	7N
R46	B	C	12O
R47	B	C	12N
R48	B	C	12O
R51	B	C	8N
R60	B	C	19I
R61	B	C	19I
R65	B	C	13L
R66	B	C	13M
R68	B	C	17I
R70	B	C	15N
R72	B	C	12O
R73	B	C	12O
R75	B	C	14M
R76	B	C	11O
R77	B	C	14J
R79	B	C	10M
R80	B	C	12O
R81	B	C	10N
R82	B	C	16M
R84	B	C	16N
R85	B	C	16L
R88	B	C	8N
R90	B	C	14M
R91	B	C	13N
R92	B	C	15M
R93	B	C	15M
R104	B	C	16M
R113	B	C	13L
R114	B	C	16O
R117	B	C	10N
R118	B	C	10M
R401	B	C	16J
R402	B	C	16J
R403	B	C	16J
R404	B	C	16I
R405	B	C	16I
R406	B	C	16I
R407	B	C	19F
R408	B	C	19F
R409	B	C	16F
R2001	B	C	8M
R2002	B	C	7M
R2003	A	D	7L
R2005	A	D	9I
R2006	A	D	10I
R2007	B	C	10J
R2008	B	C	10K
R2009	B	C	10K
R2010	B	C	10K
R2011	B	C	14K
R2013	B	C	13J
R2014	B	C	13J
R2015	B	C	14J
R2016	B	C	14K
R2017	B	C	13K
R2018	B	C	14K
R2019	B	C	14K
R2020	B	C	14K
R2022	B	C	14K
R2023	B	C	14J
R2025	B	C	14J
R2026	B	C	14J
R2051	B	C	18L
R2052	B	C	18L
R2053	B	C	18L
R2054	B	C	6K
R2055	B	C	6K
R2056	B	C	18L
R2057	B	C	18H
R2058	B	C	18H
R2059	B	C	19H
R2060	B	C	19H
R2061	B	C	21F
R2062	B	C	21F
R2063	B	C	21G
R2064	B	C	19H
R2065	B	C	18G
R2201	B	C	7M
R2202	B	C	8L
R2203	B	C	8L
R2204	B	C	8L
R2205	B	C	8L
R2206	A	D	7L
R2208	A	D	7K
R2209	A	D	7K
R2210	B	C	9L
R2211	B	C	9K
R2213	B	C	10J
R2215	B	C	10J
R2217	B	C	10I
R2218	B	C	10I
R2219	A	D	8J
R2220	B	C	10J
R2222	B	C	10J
R2223	B	C	10J
R2224	B	C	10J
R2225	B	C	10J
R2226	B	C	10H
R2227	B	C	9H
R2228	B	C	10L
R2229	A	D	9L
R2232	B	C	7L
R2233	B	C	8K
R2234	B	C	9K
R2235	B	C	8K
R2236	B	C	8J
R2251	B	C	6L
R2252	B	C	10I
R2401	B	C	19D
R2402	B	C	19D
R2403	B	C	19D
R2404	B	C	19D
R2405	B	C	20C
R2406	B	C	20C
R3011	A	D	8G
R3012	B	C	8F
R3013	B	C	8F
R3014	B	C	8F
R3015	B	C	8E
R3016	A	D	7G
R3017	A	D	8F
R3018	A	D	7G
R3019	A	D	7G
R3020	B	C	7F
R3021	B	C	7F
R3022	B	C	8E
R3025	B	C	7E
R3026	B	C	7E
R3027	B	C	7E
R3029	B	C	8E
R3030	B	C	8E
R3031	B	C	8D
R3032	B	C	8D
R3033	B	C	8D
R3034	B	C	8D
R3035	B	C	7D
R3036	B	C	7D
R3038	B	C	8D
R3039	B	C	8D
R3040	B	C	8D
R3041	B	C	8D
R3042	B	C	9D
R3044	A	D	8C
R3046	A	D	8C
R3047	A	D	8C
R3048	A	D	8C
R3049	B	C	9C
R3050	B	C	9C
R3051	B	C	9C
R3052	B	C	9C
R3053	B	C	9C
R3054	B	C	10C
R3055	B	C	9C
R3058	B	C	10C
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R3060	B	C	10C
R3061	B	C	11C
R3062	B	C	11C
R3063	B	C	11C
R3066	A	D	12C
R3069	B	C	11D
R3071	B	C	12C
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R3073	B	C	13C
R3074	A	D	14D
R3075	B	C	12D
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R3088	B	C	12E
R3089	B	C	12E
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R3091	B	C	12E
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R3094	A	D	12E
R3095	A	D	12G
R3096	A	D	12G
R3097	B	C	12F
R3103	B	C	11F
R3105	B	C	11E
R3106	B	C	11F
R3107	B	C	14E
R3201	B	C	8J
R3202	B	C	7I
R3203	B	C	7J
R3204	B	C	6H
R3205	A	D	14C
R3206	A	D	5C
R3207	B	C	16A
R3208	B	C	18A
R3209	B	C	17A
R3210	B	C	9B
R3211	B	C	9C
R3212	B	C	5D
R3213	B	C	8D
R3214	B	C	10A
R3215	B	C	7A
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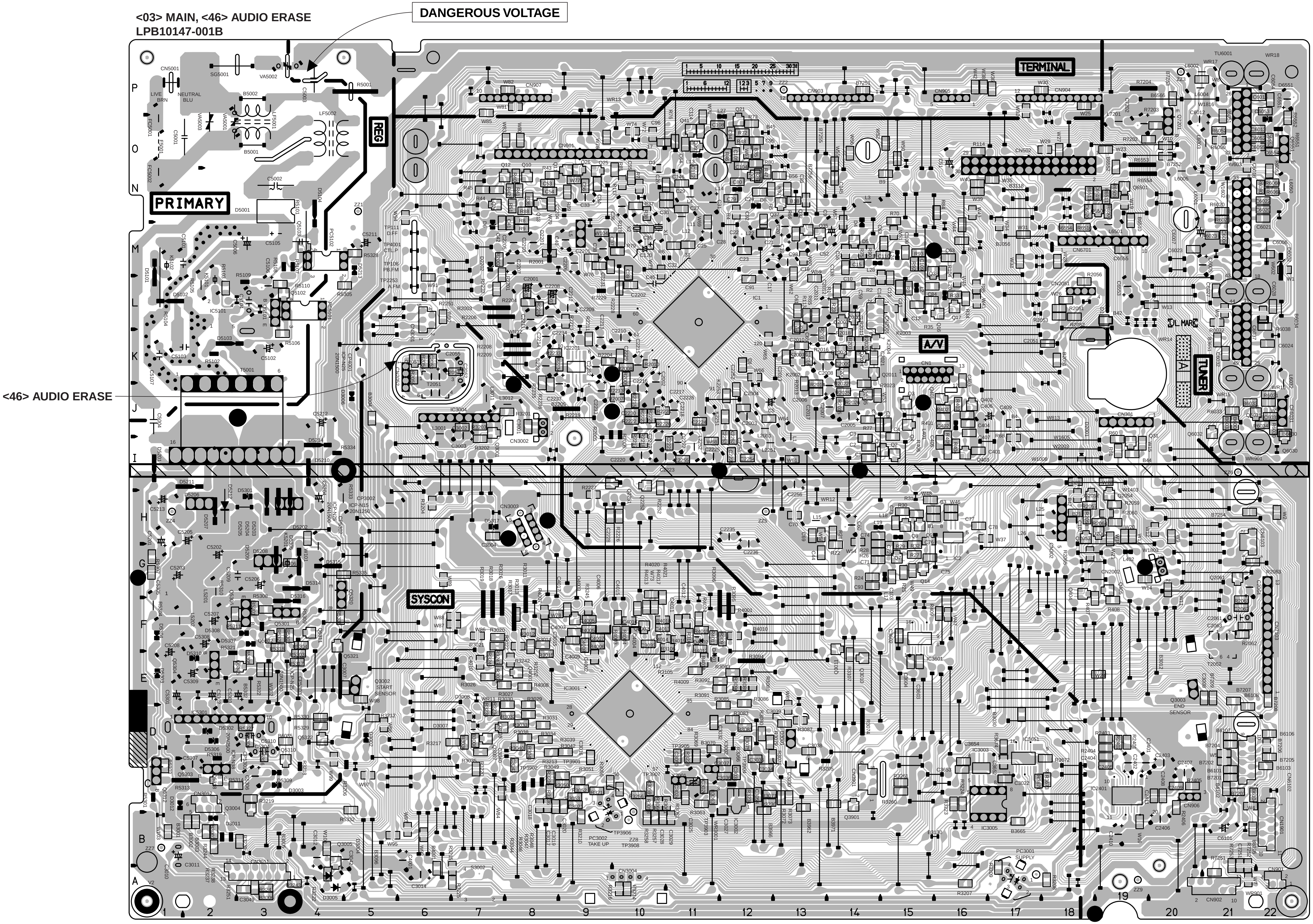
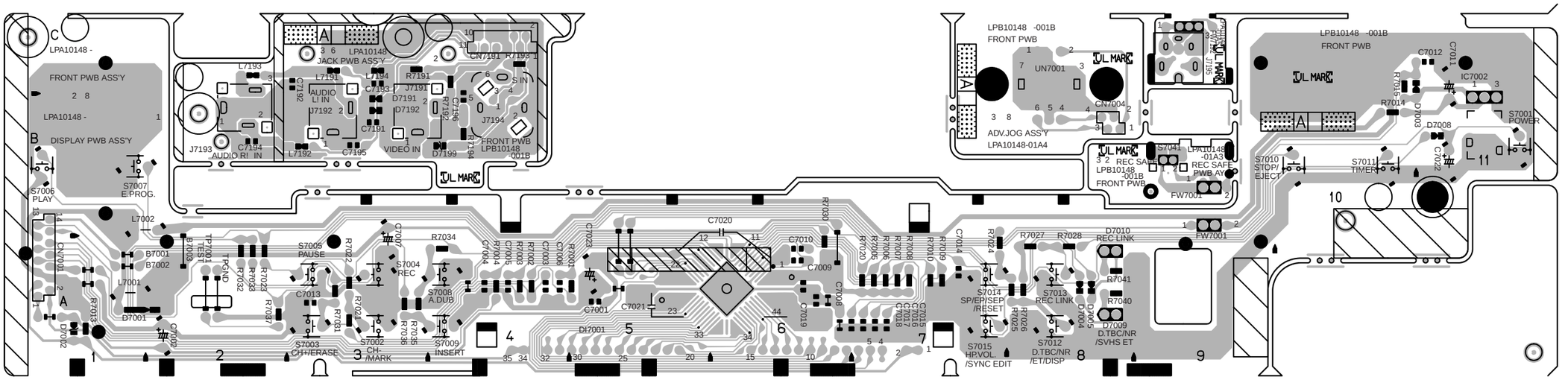
R3217	B	C	7D
R3218	A	D	4C
R3219	B	C	3C
R3220	B	C	7C
R3222	B	C	4A
R3223	B	C	16C
R3224	B	C	16C
R3225	B	C	7A
R3229	B	C	11D
R3230	B	C	12C
R3231	B	C	12C
R3233	B	C	7D
R3234	B	C	7D
R3235	B	C	8C
R3236	B	C	8C
R3237	A	D	2B
R3238	A	D	2B
R3239	B	C	3B
R3241	B	C	3A
R3242	B	C	8F
R3243	B	C	4A
R3244	B	C	2B
R3245	B	C	9F
R3246	B	C	7E
R3247	B	C	7E
R3251	B	C	3A
R3252	B	C	8F
R3256	B	C	10C
R3257	B	C	10B
R3258	B	C	10B
R3260	B	C	15C
R3261	B	C	15C
R3671	B	C	17C
R3672	B	C	18D
R3673	B	C	18C
R3674	B	C	17D
R4001	B	C	12F
R4003	B	C	10F
R4004	B	C	10F
R4005	B	C	9F
R4006	B	C	9F
R4007	B	C	8F
R4008	B	C	8E
R4009	B	C	11E
R4010	B	C	12F
R4011	B	C	11F
R4012	B	C	11F
R4013	B	C	10F
R4014	B	C	11F
R4015	B	C	11F
R4016	B	C	11E
R4017	B	C	10F
R4018	B	C	10F
R4019	B	C	11F
R4020	B	C	10G
R4021	B	C	10G
R5001	A	D	4P
R5101	A	D	4N
R5102	A	D	2K
R5103	B	C	2L
R5104	A	D	1L
R5105	A	D	2L
R5106	B	C	3K
R5107	A	D	4M
R5108	A	D	3M
R5109	A	D	3L
R5110	B	C	3L
R5301	A	D	1C
R5302	B	C	3F
R5303	B	C	4E
R5304	A	D	1G
R5305	B	C	5L
R5306	B	C	3D
R5307	B	C	1G
R5308	B	C	3F
R5309	A	D	3F
R5310	B	C	2F
R5311	B	C	2F
R5313	A	D	1C
R5314	B	C	2C
R5317	B	C	4E
R5318	B	C	3F
R5319	A	D	2D
R5321	A	D	3E
R5322	B	C	3E
R5323	B	C	3F
R5326	B	C	3D
R5327	B	C	3D
R5328	B	C	5M
R5329	B	C	4D
R5330	B	C	4D
R5332	B	C	5C
R5333	A	D	4H
R5334	A	D	4I
R5335	B	C	5G
R5336	B	C	4F
R6020	B	C	21N
R6021	B	C	21N
R6023	B	C	21M
R6030	B	C	22J
R6031	B	C	22J
R6032	B	C	21L
R6033	B	C	21J
R6034	B	C	22J
R6038	B	C	22L
R6050	B	C	21O
R6051	B	C	21O
R6052	B	C	21O
R6053	B	C	22N
R6060	B	C	22N
R6061	B	C	22N
R6080	B	C	22N
R6508	B	C	19N
R6509	B	C	19N
R6510	B	C	18M
R6511	B	C	19N
R6551	A	D	22O
R6552	B	C	22O
R6553	A	D	20O
R6554	A	D	20N
R7202	B	C	20O
R7203	B	C	20O
R7204	A	D	20P
R7251	B	C	21A
R7252	B	C	21B
R7253	B	C	21B
SWITCH			
S3002	A	D	7A
TESTPOINT			
TP106	A	D	6M
TP111	A	D	6M
TP2253	A	D	6L
TP3901	B	C	9C
TP3902	B	C	8C
TP3903	B	C	11C
TP3904	B	C	12C
TP3905	B	C	11C
TP3906	B	C	10C
TP3907	B	C	10C
TP3908	B	C	10C
TP4001	A	D	6M
OTHER			
CF6031	A	D	22J
CP3002	A	D	6H
CP4001	A	D	5K
CP5301	A	D	3D
CP5302	A	D	4H
CP5303	A	D	4E
F5001	A	D	1P
FC5001	A	D	1P
FC5002	A	D	1N
K2001	B	C	13K
K2002	B	C	13K
K2003	B	C	15L
K2004	B	C	14K
K2251	B	C	12J
K2252	B	C	12I
K2253	B	C	12J
K5101	A	D	2M
K5102	A	D	1M
K5201	A	D	3G
LF5001	A	D	2P
LF5002	A	D	5O
PC3001	A	D	17A
PC3002	A	D	9C
PC5101	A	D	4L
PC5102	A	D	5M
SG5001	A	D	2P
T2051	A	D	6K
T2052	A	D	21F
T5001	A	D	2J
TU6001	A	D	21P
VA5001	A	D	2P
VA5002	A	D	4P
VA5003	A	D	2P
WR11	A	D	7E
WR12	A	D	8L
WR15	A	D	21J
WR16	A	D	21J
WR17	A	D	21P
WR18	A	D	22P
WR901	A	D	21A
WR3001	A	D	12C
X1	A	D	10N
X2	A	D	10M
X3001	A	D	11C
X3002	A	D	11C

4.17 MAIN AND AUDIO ERASE CIRCUIT BOARD



<28> SW/DISPLAY, <32> REC SAFETY, <36> JACK, <38> ADV.JOG
LPB10148-001B



<14> DEMODULATOR
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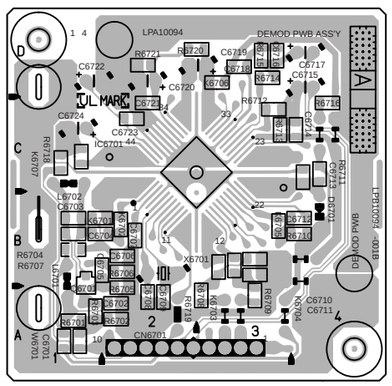
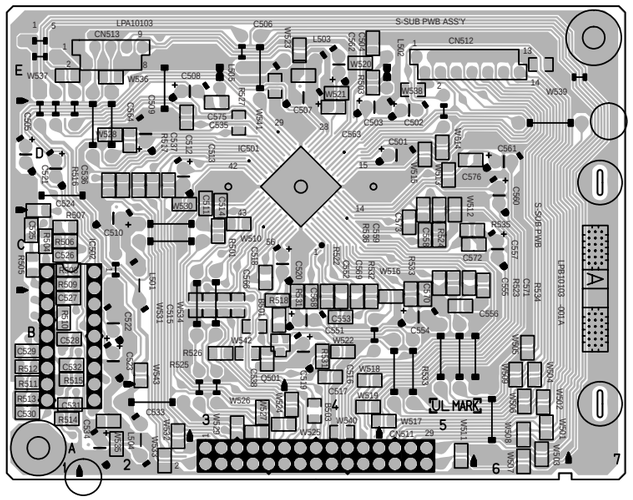


COMPONENT PARTS LOCATION GUIDE
<DEMODULATOR>

REF.NO.	LOCATION		
CAPACITOR			
C1501	A	D	4C
C1502	A	D	3D
C1503	A	D	4D
C1504	A	D	4C
C1505	A	D	3D
C1506	A	D	3C
C1507	A	D	2C
C1508	A	D	1D
C1509	A	D	2C
C1510	A	D	1B
C1511	A	D	1A
C1512	A	D	2A
C1513	A	D	2B
C1514	A	D	2A
C1515	A	D	3B
C1516	A	D	3C
C1517	A	D	3B
C1518	A	D	3A
C1519	A	D	3B
C1520	A	D	3A
C1521	A	D	2C
CONNECTOR			
CN1501	A	D	3A
IC			
IC1501	B	C	2C
TRANSISTOR			
Q1501	A	D	3B
Q1502	A	D	3B
RESISTOR			
R1501	A	D	4C
R1502	A	D	2C
R1503	A	D	2C
R1504	A	D	2B
R1505	A	D	2B
R1506	A	D	2B
R1507	A	D	2B
R1508	A	D	3B
R1509	A	D	3B
R1510	A	D	4B
R1511	A	D	3A
R1514	A	D	2B
R1515	A	D	2C
R1517	A	D	2C

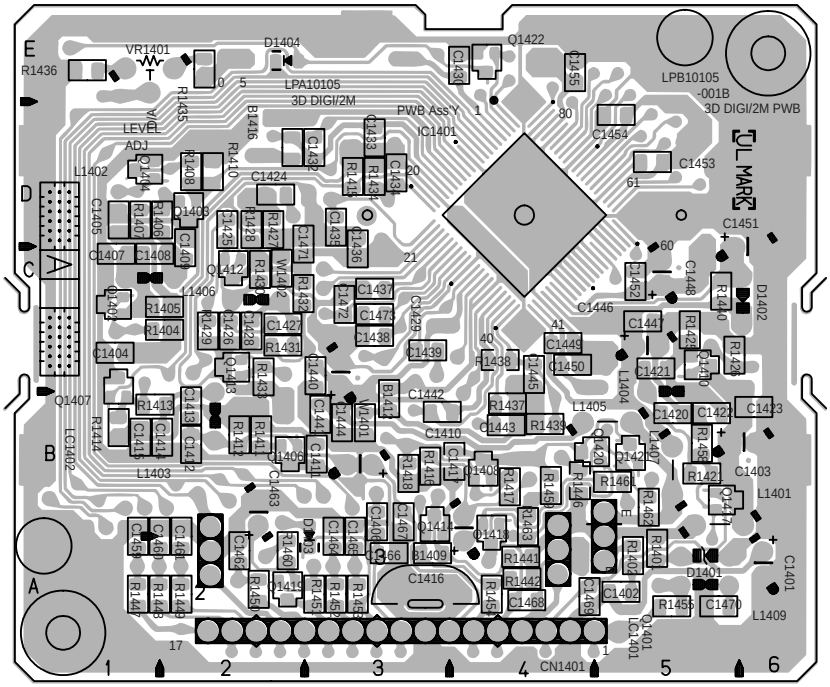
<15> S-SUB
LPB10103-001A



COPMONENT PARTS LOCATION GUIDE <S-SUB>

REF.NO.	LOCATION		
CAPACITOR			
C501	A	D	5D
C502	A	D	5D
C503	A	D	4D
C504	B	C	4E
C505	A	D	1D
C506	B	C	4E
C507	A	D	4E
C508	A	D	2E
C509	A	D	2D
C510	A	D	2C
C511	B	C	3C
C512	B	C	2D
C513	A	D	2D
C514	B	C	3C
C515	B	C	3B
C516	B	C	4B
C517	B	C	4B
C518	B	C	3C
C519	A	D	4B
C520	A	D	3C
C521	A	D	1D
C522	A	D	2B
C523	A	D	2B
C524	B	C	1C
C525	B	C	1C
C526	B	C	1C
C527	B	C	1B
C528	B	C	1B
C529	B	C	1B
C530	B	C	1A
C531	B	C	1A
C532	B	C	1B
C533	B	C	2A
C534	A	D	2A
C535	B	C	2D
C536	B	C	2D
C537	B	C	2D
C538	B	C	3B
C551	A	D	4B
C552	B	C	4B
C553	B	C	4B
C554	A	D	5B
C555	B	C	5C
C556	B	C	5B
C557	A	D	6C
C558	B	C	5C
C559	B	C	5C
C560	A	D	6D
C561	A	D	6D
C562	A	D	4E
C563	B	C	4D
C564	B	C	2D
C566	B	C	3B
C568	B	C	4B
C569	B	C	4B
C570	B	C	5B
C571	B	C	5C
C572	B	C	6C
C573	B	C	5C
C575	B	C	3D
C576	B	C	5D
CONNECTOR			
CN511	A	D	3A
CN512	A	D	5E
CN513	A	D	1E
IC			
IC501	B	C	4D
IC502	A	D	1C
COIL			
L501	A	D	2B
L502	A	D	5E
L503	A	D	3E
L504	A	D	2A
L505	A	D	3E
TRANSISTOR			
Q501	B	C	3B
RESISTOR			
R501	B	C	3C
R503	B	C	4E
R504	B	C	1C
R505	B	C	1C
R506	B	C	1C
R507	B	C	1C
R508	B	C	1C
R509	B	C	1C
R510	B	C	1B
R511	B	C	1B
R512	B	C	1B
R513	B	C	1A
R514	B	C	1A
R515	B	C	1B
R516	B	C	2D
R517	B	C	2D
R518	B	C	3B
R522	B	C	4B
R523	B	C	5C
R524	B	C	5C
R525	B	C	3B
R526	B	C	3B
R527	B	C	3D
R531	B	C	4B
R532	B	C	4B
R533	B	C	5B
R534	B	C	6C
R535	B	C	5C
R536	B	C	5C

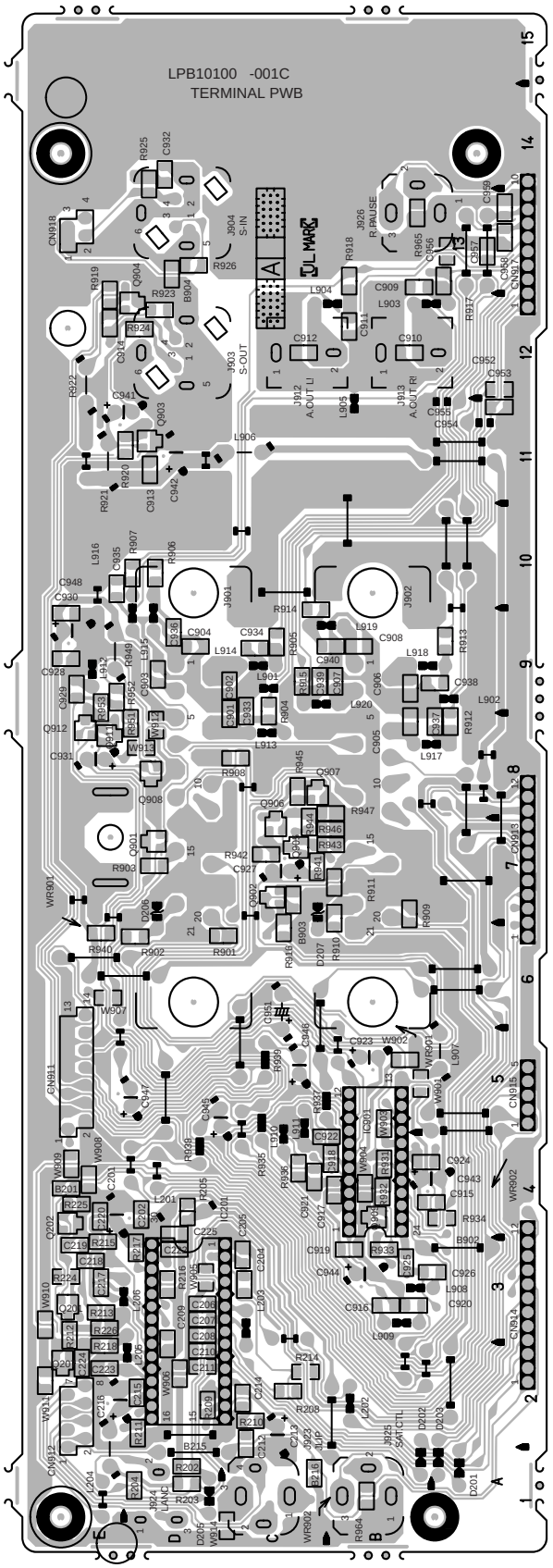
<05> 3D DIGITAL/2M
LPB10105-001B



COMPONENT PARTS LOCATION GUIDE <3D DIGITAL/2M>

REF.NO.	LOCATION		
CAPACITOR			
C1401	A	D	5A
C1402	B	C	5A
C1403	A	D	5B
C1404	B	C	2B
C1405	A	C	1C
C1406	B	C	3A
C1407	B	C	2B
C1408	B	C	1B
C1409	B	C	1B
C1410	A	D	2B
C1411	A	C	1B
C1412	B	C	2B
C1413	A	C	2B
C1414	A	C	2C
C1415	B	C	1C
C1416	A	D	3B
C1417	A	C	3B
C1420	A	C	4B
C1421	A	C	4B
C1422	A	C	4B
C1423	B	C	4B
C1424	B	C	3B
C1425	A	C	4C
C1426	B	C	5B
C1427	B	C	5B
C1428	A	C	5C
C1429	A	D	3B
C1430	A	C	2D
C1431	A	C	2D
C1432	B	C	2C
C1433	A	C	3C
C1434	B	C	3B
C1435	B	C	1E
C1436	B	C	2E
C1437	A	C	3C
C1438	B	C	3C
C1439	A	C	5A
C1440	B	C	3C
C1441	A	C	3C
C1442	B	C	4C
C1443	B	C	4C
C1444	A	C	4C
C1445	A	C	4C
C1446	A	D	5C
C1447	B	C	5B
C1448	A	D	5C
C1449	A	C	4D
C1450	A	C	3D
C1451	A	D	5D
C1452	A	C	3D
C1453	A	C	3D
C1454	A	C	2D
C1455	B	C	2D
C1456	A	D	5D
C1457	A	C	5E
C1458	A	C	5D
C1459	A	C	1A
C1460	A	C	1B
C1461	A	C	1B
C1462	A	C	2A
C1463	A	D	1D
C1464	A	C	3A
C1465	A	C	3A
C1466	A	C	3A
C1467	B	C	3A
C1468	B	C	4A
C1469	B	C	4A
C1470	B	C	6A
C1471	B	C	5B
C1472	A	C	3C
C1473	A	C	3C
CONNECTOR			
CN1401	A	D	5A
DIODE			
D1401	A	D	6B
D1402	A	D	5D
D1403	A	C	1C
IC			
IC1401	B	C	3D
IC1402	A	C	4D
COIL			
L1401	A	D	4B
L1402	A	D	1B
L1403	A	D	2B
L1404	A	D	4C
L1405	A	D	4B
L1406	A	D	5B
L1407	A	D	6B
L1408	A	D	6C
L1409	A	D	5A
TRANSISTOR			
Q1401	A	D	5B
Q1402	B	C	2B
Q1403	A	C	2C
Q1404	A	C	2C
Q1406	A	C	2B
Q1407	B	C	2C
Q1408	A	C	3B
Q1410	B	C	4B
Q1412	A	C	5B
Q1413	A	C	5C
Q1414	A	C	3A
Q1415	B	C	5D
Q1416	A	C	4D
Q1417	A	C	4B
Q1418	B	C	4A
Q1419	A	C	2B
Q1420	A	C	4A
Q1421	A	C	4B
Q1422	A	C	1C
RESISTOR			
R1401	B	C	5B
R1402	B	C	5A
R1404	B	C	2B
R1405	B	C	2B
R1406	B	C	1B
R1407	A	C	2C
R1408	A	C	2C
R1410	A	C	2C
R1411	A	C	2B
R1412	A	C	2B
R1413	A	C	2C
R1414	A	C	2C
R1415	B	C	2C
R1416	B	C	3B
R1417	B	C	3B
R1418	A	C	3B
R1421	A	C	4B
R1425	A	C	4B
R1426	B	C	3C
R1427	B	C	3B
R1428	A	C	3B
R1429	A	C	4B
R1430	A	C	5B
R1431	B	C	5C
R1432	A	C	5C
R1433	A	C	5C
R1434	B	C	2B
R1435	B	C	1E
R1436	B	C	1E
R1437	B	C	4C
R1438	A	C	3C
R1439	A	C	4C
R1440	B	C	5C
R1441	A	C	3A
R1442	A	C	3A
R1446	A	C	2A
R1447	B	C	1A
R1448	B	C	1A
R1449	B	C	2A
R1450	B	C	2A
R1451	B	C	3A
R1452	B	C	3A
R1453	B	C	3A
R1454	B	C	4A
R1455	B	C	5A
R1456	B	C	5C
R1457	A	C	4C
R1458	A	C	4B
R1459	A	C	4B
R1460	A	C	2B
R1461	A	C	3B
R1462	A	C	3B
R1463	A	C	4A
VR1401	A	D	1E
OTHER			
LC1401	A	D	4A
LC1402	A	D	2A

<06> TERMINAL
LPB10100-001C



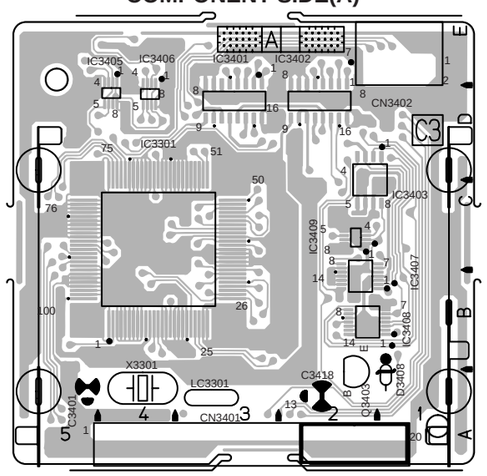
COMPONENT PARTS LOCATION GUIDE <TERMINAL>

REF.NO.	LOCATION		
CAPACITOR			
C201	A	D	4E
C202	B	C	4D
C204	B	C	3C
C205	B	C	3C
C206	B	C	3D
C207	B	C	3D
C208	B	C	3D
C209	B	C	2D
C210	B	C	2D
C211	B	C	2D
C212	B	C	2C
C213	A	D	2C
C214	B	C	2C
C215	B	C	2D
C216	A	D	2E
C217	B	C	3E
C218	B	C	3E
C219	B	C	3E
C220	B	C	4E
C222	B	C	3D
C223	B	C	2E
C224	B	C	2E
C225	B	C	4D
C901	B	C	8D
C902	B	C	9D
C903	B	C	9D
C904	B	C	9D
C905	B	C	8B
C906	B	C	9B
C907	B	C	9C
C908	B	C	9B
C909	B	C	13B
C910	B	C	12B
C911	B	C	12B
C912	B	C	12C
C913	B	C	11D
C914	B	C	12E
C915	B	C	4B
C916	B	C	3B
C917	B	C	4C
C918	B	C	4C
C919	B	C	3B
C920	B	C	3B
C921	B	C	4C
C922	B	C	4C
C923	A	D	5B
C924	B	C	4B
C925	B	C	3B
C926	B	C	3B
C927	A	D	7C
C928	B	C	9E
C929	B	C	9E
C930	B	C	9E
C931	A	D	8E
C932	B	C	14D
C933	B	C	9C
C934	B	C	9C
C935	B	C	10E
C936	B	C	9D
C937	B	C	8B
C938	B	C	9B
C939	B	C	9C
C940	B	C	9C
C941	A	D	11E
C942	A	D	11D
C943	A	D	4B
C944	A	D	3B
C945	A	D	5D
C946	A	D	5C
C947	A	D	5D
C948	A	D	9E
C951	A	D	5C
C952	B	C	11A
C953	B	C	12A
C954	A	D	11A
C955	A	D	11A
C956	B	C	13A
C957	B	C	13A
C958	B	C	13A
C959	B	C	13A
CONNECTOR			
CN911	A	D	5E
CN912	A	D	2E
CN913	A	D	6A
CN914	A	D	2A
CN915	A	D	5A
CN917	A	D	12A
CN918	A	D	13E
DIODE			
D201	A	D	1A
D202	A	D	1B
D203	A	D	1B
D205	A	D	1D
D206	A	D	7D
D207	A	D	7C
IC			
IC201	A	D	3D
IC901	A	D	4B
JACK			
J901	A	D	8D
J902	A	D	8B
J903	A	D	12D
J904	A	D	13D
J912	A	D	12C
J913	A	D	12B
J923	A	D	1C
J924	A	D	1D
J925	A	D	1B
J926	A	D	13B
COIL			
L201	A	D	4D
L202	A	D	2B
L203	A	D	3C
L204	A	D	2E
L205	A	D	3E
L206	A	D	3E
L901	A	D	9C
L902	A	D	9B
L903	A	D	12A
L904	A	D	12B
L905	A	D	12B
L906	A	D	11C
L907	A	D	5B
L908	A	D	3B
L909	A	D	3B
L910	A	D	4C
L911	A	D	5C
L912	A	D	9E
L913	A	D	8C
L914	A	D	9C
L915	A	D	10D
L916	A	D	10D
L917	A	D	8A
L918	A	D	9A
L919	A	D	9B
L920	A	D	9B
TRANSISTOR			
Q201	B	C	3E
Q202	B	C	4E
Q207	B	C	2E
Q901	B	C	7D
Q902	B	C	7C
Q903	B	C	11D
Q904	B	C	12D
Q905	B	C	7C
Q906	B	C	7C
Q907	B	C	8C
Q908	B	C	8D
Q909	B	C	4B
Q911	B	C	8E
Q912	B	C	8E
RESISTOR			
R202	B	C	1D
R203	B	C	1D
R204	B	C	1D
R205	B	C	4D
R208	B	C	2C
R209	B	C	2D
R210	B	C	2C
R211	B	C	2D
R212	B	C	3E
R213	B	C	3E
R214	B	C	2C
R215	B	C	3E
R216	B	C	3D
R217	B	C	3D
R218	B	C	2E
R224	B	C	3E
R225	B	C	4E
R226	B	C	3E
R901	B	C	6D
R902	B	C	6D
R903	B	C	7D
R904	B	C	9C
R905	B	C	9C
R906	B	C	10D
R907	B	C	10D
R908	B	C	8C
R909	B	C	7B
R910	B	C	7C
R911	B	C	7C
R912	B	C	8A
R913	B	C	9A
R914	B	C	9C
R915	B	C	9C
R916	B	C	6C
R917	B	C	13A
R918	B	C	13B
R919	B	C	12E
R920	B	C	11E
R921	A	D	11E
R922	A	D	11E
R923	B	C	12D
R924	B	C	12D
R925	B	C	14D
R926	B	C	13D
R931	B	C	4B
R932	B	C	4B
R933	B	C	3B
R934	B	C	4B
R935	A	D	5C
R936	B	C	4C
R937	A	D	5C
R938	A	D	4D
R939	A	D	5C
R940	B	C	6E
R941	B	C	7C
R942	B	C	7C
R943	B	C	7C
R944	B	C	7C
R945	B	C	8C
R946	B	C	7C
R947	B	C	8C
R949	A	D	9E
R951	B	C	8D
R952	B	C	9E
R953	B	C	9E
R964	B	C	1B
R965	B	C	13B
OTHER			
WR901	A	D	5B
WR902	A	D	4A

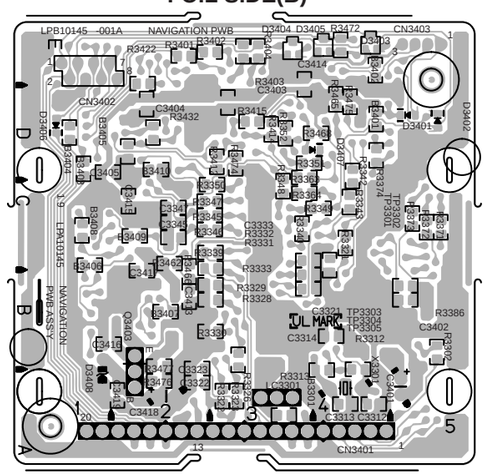
4.21 NAVIGATION CIRCUIT BOARD

<19> NAVIGATION
LPB10145-001A

COMPONENT SIDE(A)



FOIL SIDE(B)



COMPONENT PART LOCATION GUIDE <NAVIGATION>

REF.NO.	LOCATION		
CAPACITOR			
C3312	B	C	4A
C3313	B	C	4A
C3314	B	C	4B
C3321	B	C	4C
C3322	B	C	2A
C3323	B	C	2B
C3333	B	C	4C
C3345	B	C	2C
C3346	B	C	2C
C3347	B	C	2C
C3401	A	D	5A
C3402	B	C	5B
C3403	B	C	3D
C3404	B	C	2D
C3405	B	C	1D
C3413	B	C	2B
C3414	B	C	4E
C3415	B	C	2C
C3416	B	C	2B
C3417	B	C	2C
C3418	A	D	2A
C3419	B	C	2A
CONNECTOR			
CN3401	A	D	4A
CN3402	A	D	1E

REF.NO.	LOCATION		
DIODE			
D3401	B	C	5D
D3402	B	C	5D
D3403	B	C	4E
D3404	B	C	3E
D3405	B	C	4E
D3406	B	C	1D
D3407	B	C	4D
D3408	A	D	1A
IC			
IC3301	A	C	4C
IC3401	A	C	3D
IC3402	A	C	2D
IC3403	A	C	2D
IC3405	A	C	4D
IC3406	A	C	4D
IC3407	A	C	2B
IC3408	A	C	2B
IC3409	A	C	2C
TRANSISTOR			
Q3403	A	D	2B
RESISTOR			
R3302	B	C	5B
R3312	B	C	4B
R3313	B	C	4A

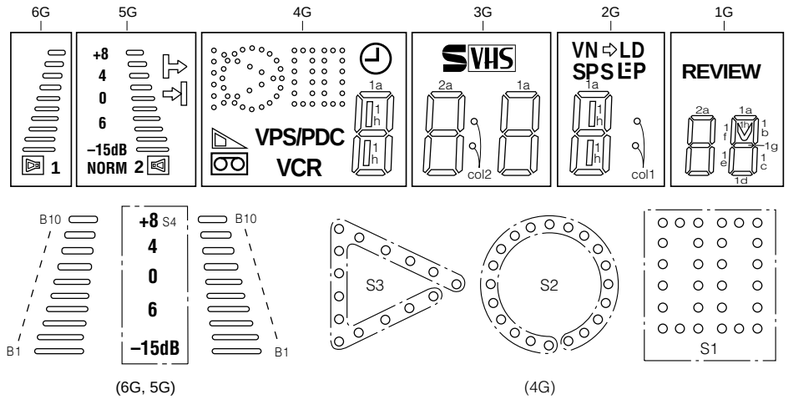
REF.NO.	LOCATION		
R3321	B	C	4C
R3322	B	C	3A
R3323	B	C	3A
R3326	B	C	3B
R3328	B	C	3B
R3329	B	C	3B
R3330	B	C	3B
R3331	B	C	4B
R3332	B	C	4C
R3333	B	C	3C
R3339	B	C	3C
R3340	B	C	4C
R3342	B	C	4D
R3343	B	C	4C
R3345	B	C	3C
R3346	B	C	3C
R3347	B	C	3C
R3348	B	C	3C
R3349	B	C	4C
R3350	B	C	3C
R3351	B	C	4D
R3352	B	C	3D
R3363	B	C	4D
R3364	B	C	4C
R3371	B	C	5C
R3372	B	C	5C

REF.NO.	LOCATION		
R3373	B	C	5C
R3374	B	C	4D
R3386	B	C	5B
R3401	B	C	2E
R3402	B	C	3E
R3403	B	C	3E
R3404	B	C	3E
R3412	B	C	3D
R3414	B	C	3D
R3415	B	C	3D
R3422	B	C	2E
R3432	B	C	2D
R3462	B	C	2C
R3465	B	C	4D
R3466	B	C	2C
R3468	B	C	4D
R3472	B	C	4E
R3474	B	C	3D
R3475	B	C	4D
R3476	B	C	2A
R3477	B	C	2B
OTHER			
LC3301	A	D	3A
TP3301	B	C	4C
TP3302	B	C	4C
TP3303	B	C	5C

REF.NO.	LOCATION		
TP3304	B	C	5C
TP3305	B	C	5C
X3301	A	D	4A

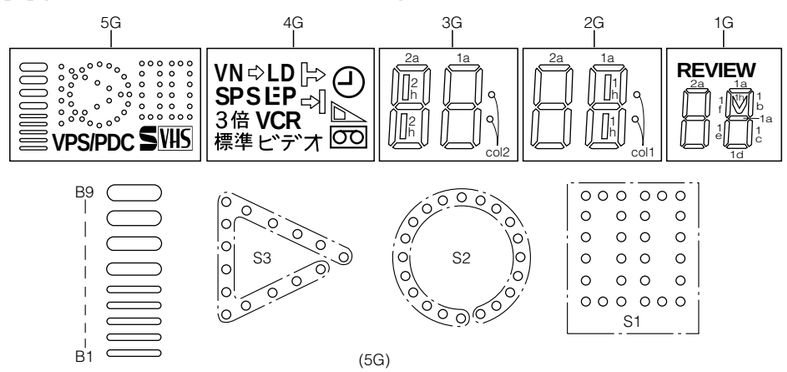
4.22 FDP GRID ASSIGNMENT AND ANODE CONNECTION

[A] (FDP with audio level indicator)



(6G, 5G) (4G)

[B] (FDP without audio level indicator)



(5G)

ANODE CONNECTION
[A]

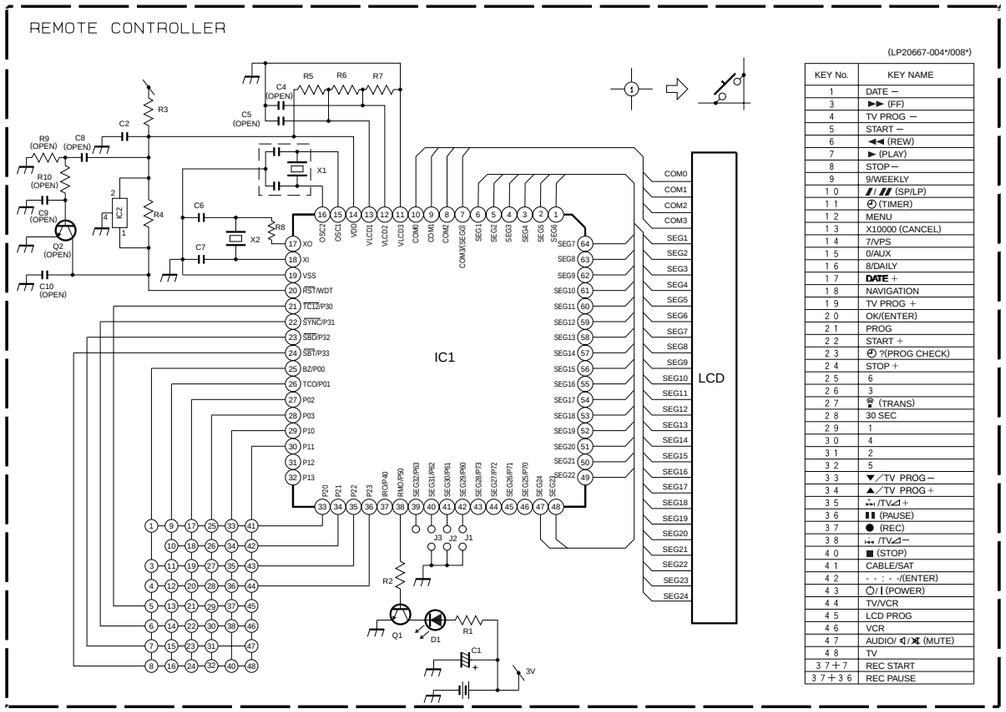
	6G	5G	4G	3G	2G	1G
P 1	—	⇨	S2	1a	1a	1a
P 2	—	⇨	S1	1b	1b	1b
P 3	—	S4	S3	1f	1f	1f
P 4	—	NORM	VPS/PDC	1g	1g	1g
P 5	1	2	◴	1c	1c	1c
P 6	▷	◁	◿	1e	1e	1e
P 7	B10	B10	📼	1d	1d	1d
P 8	B9	B9	VCR	col2	1h	1h
P 9	B8	B8	1a	2a	col1	2a
P10	B7	B7	1b	2b	⇨	2b
P11	B6	B6	1f	2f	VN	2f
P12	B5	B5	1g	2g	LD	2g
P13	B4	B4	1c	2c	SP	2c
P14	B3	B3	1e	2e	S (SEP)	2e
P15	B2	B2	1d	2d	= (SEP)	2d
P16	B1	B1	1h	SVHS	LP (SEP)	REVIEW

ANODE CONNECTION
[B]

	5G	4G	3G	2G	1G
P 1	S2	⇨	1a	1a	1a
P 2	S1	⇨	1b	1b	1b
P 3	S3	3倍	1f	1f	1f
P 4	VPS/PDC	標準	1g	1g	1g
P 5	SVHS	◴	1c	1c	1c
P 6	—	◿	1e	1e	1e
P 7	—	📼	1d	1d	1d
P 8	B9	VCR	col2	1h	1h
P 9	B8	ビデオ	2a	2a	2a
P10	B7	⇨	2b	2b	2b
P11	B6	VN	2f	2f	2f
P12	B5	LD	2g	2g	2g
P13	B4	SP	2c	2c	2c
P14	B3	S (SEP)	2e	2e	2e
P15	B2	= (SEP)	2d	2d	2d
P16	B1	LP (SEP)	2h	col1	REVIEW

4.23 REMOTE CONTROLLER SCHEMATIC DIAGRAM

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.



KEY No.	KEY NAME
1	DATE –
3	►► (FF)
4	TV PROG –
5	START –
6	◄◄ (REW)
7	► (PLAY)
8	STOP –
9	9/WEEKLY
10	▮▮/▮▮ (SP/LP)
11	◴ (TIMER)
12	MENU
13	X10000 (CANCEL)
14	7/VPS
15	0/AUX
16	8/DAILY
17	DATE +
18	NAVIGATION
19	TV PROG +
20	OK/(ENTER)
21	PROG
22	START +
23	◴ ?(PROG CHECK)
24	STOP +
25	6
26	3
27	☎ (TRANS)
28	30 SEC
29	1
30	4
31	2
32	5
33	▼/TV PROG –
34	▲/TV PROG +
35	▪▪/TV◿+
36	▮▮ (PAUSE)
37	● (REC)
38	▪▪/TV◿–
40	■ (STOP)
41	CABLE/SAT
42	- - : - -/(ENTER)
43	⏻/I (POWER)
44	TV/VCR
45	LCD PROG
46	VCR
47	AUDIO/◿)/✕ (MUTE)
48	TV
37+7	REC START
37+36	REC PAUSE

4.24 CPU PIN FUNCTION

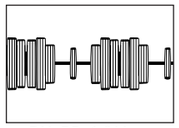
<SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	CTL(+)	IN/OUT	CTL(+) SIGNAL
2	SVSS	-	GND
3	CTL(-)	IN/OUT	CTL(-) SIGNAL
4	CTLBIAS	-	CTL BIAS VOLTAGE
5	CTLFB	IN	CTL PULSE FEED BACK
6	CTLAMPOUT	OUT	CTL PULSE OUTPUT
7	CTLSMTIN	IN	CTL PULSE INPUT
8	CFG	IN	CAPSTAN FG PULSE INPUT
9	SVCC	-	SYSTEM POWER
10	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
11	NORM/MESEC/S	IN	SVHS MODE:H
12	SECAM_DET(H)/KILLER_DET/BIT_IN(H)	IN	NC/COLOR KILLER DETECT / NC [HR-S9850EU/EK] DETECTION SIGNAL FOR SECAM ON PB MODE(SECAM: H) / NC / NC [HR-S9850MS]
13	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
14	START_SENSOR	IN	STATR SENSOR
15	END_SENSOR	IN	END SENSOR
16	IND(L)	IN	AUDIO INPUT (LCH) FOR THE FDP AUDIO INDICATOR
17	NC	-	NC
18	SCR_ID/WA_DET	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H) / NC
19	IND(R)	IN	AUDIO INPUT (RCH) FOR THE FDP AUDIO INDICATOR
20	BS_ANT/AFC	IN	NC / TUNING CHECK
21	LED/RF AGC	IN	NC / CHANGES IN ATS+IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT
22	A.ENV/IND(L)	IN	AUDIO PB FM ENV.INPUT/NON HiFi MODEL:L
23	AVSS	-	GND FOR ANALOG CIRCUIT
24	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
25	LSA	IN	MECHANISM MODE DETECT(A)
26	LSB	IN	MECHANISM MODE DETECT(B)
27	LSC	IN	MECHANISM MODE DETECT(C)
28	CAP_REV(L)	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:H/REV:L)
29	RC	IN	REMOTE CONTROL DATA INPUT
30	LOCK(L)/P.SAVE[0.1]	IN	TUNING PLL LOCK DETECT:L / NC
31	P50_IN	IN	CONTROL SIGANAL FOR TV LINK
32	R.PAUSE/COMPU_IN	IN	REMOTE PAUSE CONTROL / NC
33	RAE_OUT/COMPUOUT	-	NC
34	P50_OUT	OUT	CONTROL SIGANAL FOR TV LINK
35	LMC1	OUT	LOADING MOTOR DRIVE(1)
36	LMC2	OUT	LOADING MOTOR DRIVE(2)
37	LMC3	OUT	LOADING MOTOR DRIVE(3)
38	SB_G(PWM)	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
39	STB/TEST	OUT	STROBE SIGNAL (FOR FDP DRIVER)
40	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
41	HP_CTL	-	NC
42	PROTECT	IN	DETECTION SIGNAL FOR SW POWER SUPPLY
43	VSS	-	GND
44	RMO	OUT	REMOTE CONTORL OUTPUT FOR SATELLITE RECEIVER
45	VCC	-	SYSTEM POWER
46	EXP2_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR TUNER/REG CONTORL
47	EXP1_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR AUDIO/VIDEO CONTORL
48	EXP_CLK	OUT	SERIAL DATA TRANSFER CLOCK FOR AUDIO/VIDEO AND TUNER/REG CONTORL
49	I2C_DATA_A/V	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR VIDEO/AUDIO IC
50	I2C_CLK_A/V	OUT	SERIAL DATA TRANSFER CLOCK FOR VIDEO/AUDIO IC
51	S.DATA_TOSYS	IN	SERIAL DATA TRANSFER OUTPUT FROM THE ON-SCREEN IC TO THE FDP DRIVER
52	S.DATA_FRSYS	OUT	SERIAL DATA TRANSFER OUTPUT FROM THE FDP DRIVER TO THE ON-SCREEN IC
53	S.CLK	OUT	SERIAL DATA TRANSMISSION CLOCK FROM THE FDP DRIVER TO THE ON-SCREEN IC
54	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
55	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
56	NC	-	NC
57	NC	-	NC
58	N.REC_ST(H)	OUT	NORMAL AUDIO SOUND RECORDING START
59	JUST_CLK/SECAM(H)	OUT	NC [HR-S9850EU/EK] NC / COLOUR SYSTEM SECAM:H [HR-S9850MS]
60	TU_CLK	OUT	CLOCK FOR DATA TRANSFER TO THE TUNER UNIT
61	TU_DATA	OUT	TUNING DATA
62	FWE	-	NC
63	NMI(L)	-	NC
64	X2	-	TIMER CLOCK (32.768KHz)
65	X1	-	TIMER CLOCK (32.768KHz)
66	RES(L)	-	RESET TERMINAL (RESET ON:L)
67	OSC1(IN)	-	MAIN SYSTEM CLOCK (10MHz)
68	VSS	-	GND
69	OSC2(OUT)	-	MAIN SYSTEM CLOCK (10MHz)
70	VCC	-	SYSTEM POWER
71	MODE	-	NC
72	TU_A_MUTE(H)	OUT	TUNER AUDIO MUTE CONTROL (MUTE:H)
73	TU_V_MUTE(H)	OUT	TUNER VIDEO CONTROL (MUTE:H)
74	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE:H)
75	I2C_CLK2	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
76	I2C_DATA2	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
77	NC	-	NC
78	NC	-	NC
79	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
80	V.P.CTL	OUT	V.PULSE CONTROL, V COMPENSATION DURING SPECIAL PLAYBACK
81	R-Y_REV/EDS_CS/EXT(L)	OUT	PAL EP MODE CONTROL / NC / NC
82	VCC	-	SYSTEM POWER
83	SLOW_P	-	NC
84	VSS	-	GND
85	SP_SHORT(H)	-	NC
86	LP_SHORT(H)	-	NC
87	FLY_ON(H)	OUT	FLY REC START:H
88	H.REC_ST(H)	OUT	HIFI AUDIO SOUND RECORDING START
89	TRICK(H)/M_TRICK(L)	OUT	SPECIAL PLAYBACK: H/REC AFC FILTER, PB APC FILTER, BURST ACC FILTER, COLOR KILLER DET FILTER
90	HEAD_SEL	OUT	HEAD SELECT (LP HEAD:H, SP HEAD:L)
91	OSD_CS	OUT	CHIP SELECT FOR THE ON-SCREEN IC
92	SYNC_DET(H)	IN	DETECTION OF VIDEO SYNC SIGNAL (DETECTED:H)
93	MESECAM(H)	OUT	MESECAM:H
94	JSB/STLB	IN	INPUT FOR THE ADV. JOG
95	SHTL(L)/JOGA	-	NC
96	JOGB/S_CASS(H)	-	NC
97	JSA/STLA	IN	INPUT FOR THE ADV. JOG
98	C.SYNC	IN	COMPOSITE SYNC
99	A.FF	OUT	AUDIO FF OUTPUT
100	V.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
101	CAPPWM	OUT	CAPSTAN MOTOR CONTROL
102	DRUMPWM	OUT	DRUM MOTOR CONTROL
103	SUB_RESET	OUT	RESET SIGNAL FOR THE SUB CPU (NAVI)
104	HI_FF/REW(L)	OUT	HIGH SPEED FF/REW:L
105	SUB_BUSY	IN	SUB CPU (NAVI) BUSY
106	SUB_CS	OUT	CHIP SELECT FOR THE SUB CPU (NAVI)
107	DPG	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
108	DFG	IN	DRUM FG PULSE INPUT
109	VCC	-	SYSTEM POWER
110	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
111	VSS	-	GND
112	CTLREF	-	CTL REFFERENCE VOLTAGE

4.25 WAVEFORMS

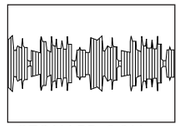
< S-SUB > **# : Only used for HR-S9850MS**

WF1-1 CN511-9



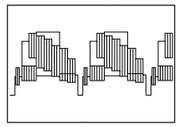
PAL PB 1.3 Vp-p
50 mV/20 µsec/DIV

 # WF1-2 CN511-9



SECAM PB 0.9 Vp-p
50 mV/20 µsec/DIV

WF2-1 CN511-10



PAL REC 1.7 Vp-p
50 mV/20 µsec/DIV

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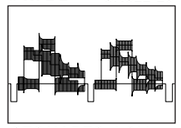
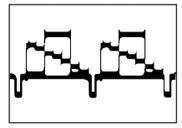


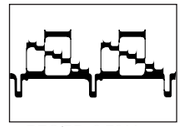
SECAM REC 1.8 Vp-p
50 mV/20 µsec/DIV

WF2-3 CN511-10



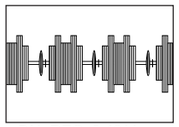
PB 1.7 Vp-p
50 mV/20 µsec/DIV

WF3 CN511-11



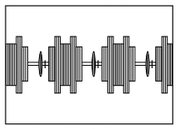
REC/PB 0.76 Vp-p
20 mV/20 µsec/DIV

WF4-1 CN511-12



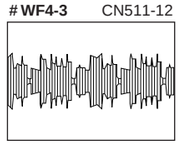
PAL REC 0.48 Vp-p
20 mV/20 µsec/DIV

WF4-2 CN511-12



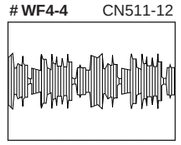
PAL PB 0.7 Vp-p
20 mV/20 µsec/DIV

 # WF4-3 CN511-12



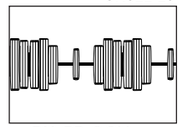
SECAM REC 0.36 Vp-p
10 mV/20 µsec/DIV

 # WF4-4 CN511-12



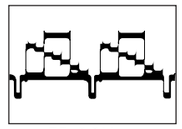
SECAM PB 0.46 Vp-p
10 mV/20 µsec/DIV

WF5 CN511-13



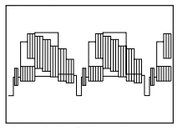
PAL PB 0.6 Vp-p
20 mV/20 µsec/DIV

WF6 CN511-17



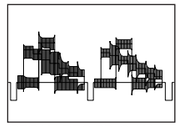
PB 2.2 Vp-p
50 mV/20 µsec/DIV

WF7-1 CN511-25



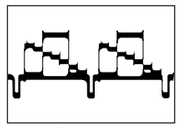
PAL REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

 # WF7-2 CN511-25



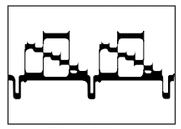
SECAM REC/PB 2.4 Vp-p
50 mV/20 µsec/DIV

WF8 CN511-27



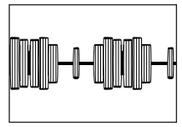
REC/PB 0.52 Vp-p
20 mV/20 µsec/DIV

WF9 CN511-29



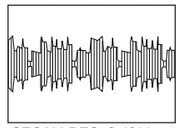
PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF10-1 CN511-30



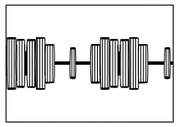
PAL REC 0.6 Vp-p
20 mV/20 µsec/DIV

 # WF10-2 CN511-30



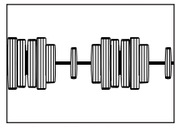
SECAM REC 0.46 Vp-p
10 mV/20 µsec/DIV

WF11-1 CN512-4



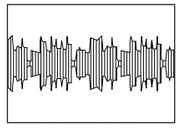
PAL REC 1.2 Vp-p
50 mV/20 µsec/DIV

WF11-2 CN512-4



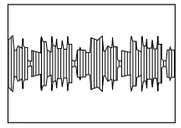
PAL PB 1.3 Vp-p
50 mV/20 µsec/DIV

 # WF11-3 CN512-4



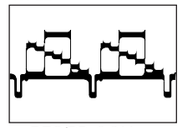
SECAM REC 0.92 Vp-p
20 mV/20 µsec/DIV

 # WF11-4 CN512-4



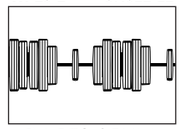
SECAM PB 0.84 Vp-p
20 mV/20 µsec/DIV

WF12 CN512-6



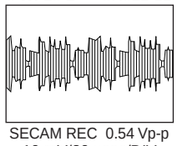
REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

WF13-1 CN512-12



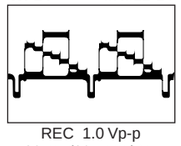
PAL REC 0.7 Vp-p
20 mV/20 µsec/DIV

 # WF13-2 CN512-12



SECAM REC 0.54 Vp-p
10 mV/20 µsec/DIV

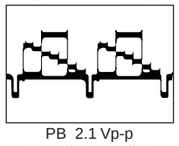
WF14 CN512-14



REC 1.0 Vp-p
20 mV/20 µsec/DIV

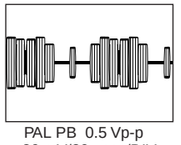
< VIDEO > **# : Only used for HR-S9850MS**

WF1 IC1-27



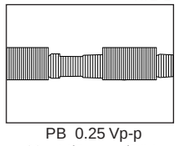
PB 2.1 Vp-p
50 mV/20 µsec/DIV

WF2 IC1-30



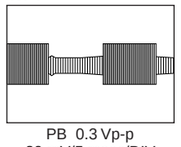
PAL PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF3 IC1-1



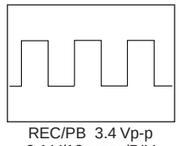
PB 0.25 Vp-p
20 mV/5 msec/DIV

WF4 TP106 PB.FM



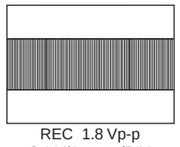
PB 0.3 Vp-p
20 mV/5 msec/DIV

WF5 TP111 D.FF



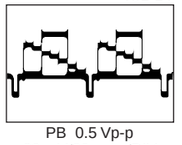
REC/PB 3.4 Vp-p
0.1 V/10 msec/DIV

WF6 IC1-105



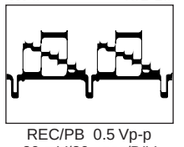
REC 1.8 Vp-p
0.1 V/1 msec/DIV

WF7 IC1-14



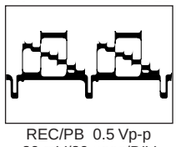
PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF8 IC1-13



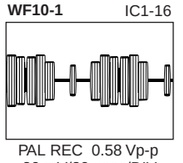
REC/PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF9 IC1-11



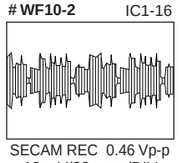
REC/PB 0.5 Vp-p
20 mV/20 µsec/DIV

WF10-1 IC1-16



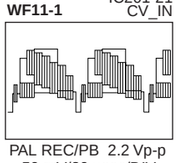
PAL REC 0.58 Vp-p
20 mV/20 µsec/DIV

 # WF10-2 IC1-16



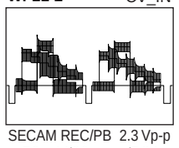
SECAM REC 0.46 Vp-p
10 mV/20 µsec/DIV

WF11-1 IC201-21 CV_IN



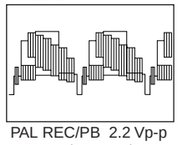
PAL REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

WF11-2 IC201-21 CV_IN



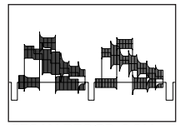
SECAM REC/PB 2.3 Vp-p
50 mV/20 µsec/DIV

WF12-1 IC201-19 CVOUT



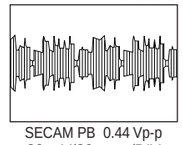
PAL REC/PB 2.2 Vp-p
50 mV/20 µsec/DIV

 # WF12-2 IC201-19 CVOUT



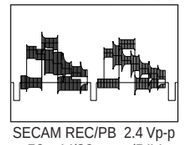
SECAM REC/PB 2.3 Vp-p
50 mV/20 µsec/DIV

 # WF13 CN302-1



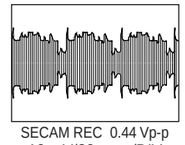
SECAM PB 0.44 Vp-p
20 mV/20 µsec/DIV

 # WF14 CN302-2



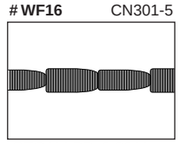
SECAM REC/PB 2.4 Vp-p
50 mV/20 µsec/DIV

 # WF15 CN301-4



SECAM REC 0.44 Vp-p
10 mV/20 µsec/DIV

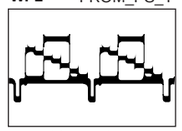
 # WF16 CN301-5



SECAM PB 0.36 Vp-p
20 mV/1 msec/DIV

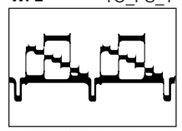
< P/S CONVERTER>
[HR-S9850MS]

WF1 CN3502-1 FROM_PS_Y



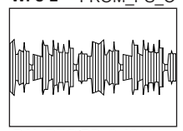
REC/PB 0.25 Vp-p
10 mV/20 µsec/DIV

WF2 CN3502-3 TO_PS_Y



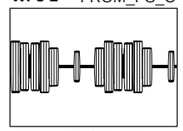
REC/PB 1.0 Vp-p
50 mV/20 µsec/DIV

WF3-1 CN3502-5 FROM_PS_C



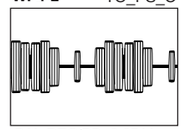
PAL REC/PB 0.46 Vp-p
10 mV/20 µsec/DIV

WF3-2 CN3502-5 FROM_PS_C



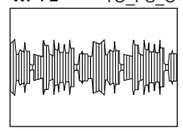
SECAM REC/PB 0.64 Vp-p
20 mV/20 µsec/DIV

WF4-1 CN3502-7 TO_PS_C



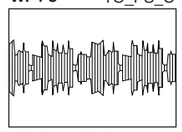
PAL REC/PB 0.65 Vp-p
20 mV/20 µsec/DIV

WF4-2 CN3502-7 TO_PS_C



SECAM REC 0.52 Vp-p
20 mV/20 µsec/DIV

WF4-3 CN3502-7 TO_PS_C



SECAM PB 0.34 Vp-p
10 mV/20 µsec/DIV

4.26 VOLTAGE CHARTS

<MAIN>

MODE PIN NO.	REC	PLAY
IC1		
1	4.2	2.2
2	2.8	2.9
3	2.6	2.6
4	1.9	1.4
5	1.9	1.4
6	2.4	2.1
7	1.6	0.7
8	0	0
9	2.6	3
10	1.9	2
11	3.1	3.1
12	2.8	2.4
13	3.1	3.1
14	3.5	2.4
15	0	0
16	2.8	2.8
17	1.5	1.5
18	2.8	2.8
19	0	4.8
20	2.8	2.8
21	1.5	2
22	2.8	2.8
23	3.1	2.9
24	4.9	4.9
25	0.3	0.3
26	0	0
27	1.3	2.3
28	2.8	2.5
29	1.9	1.9
30	2.1	2.1
31	0	0
32	2.6	2.6
33	4.9	4.9
34	2.7	2.4
35	4.9	4.9
36	2.6	2.6
37	3.3	2.3
38	2.2	2.2
39	1.3	1.3
40	1.7	1.7
41	2.7	2.7
42	2.2	2.2
43	0	0
44	2.1	2.1
45	4.6	4.6
46	4.1	4.1
47	2.9	2.9
48	2.6	2.6
49	5	5
50	2.4	2.5
51	2.8	2.8
52	2.3	2.3
53	2.3	2.3
54	2.6	2.6
55	2.2	2.2
56	0.5	0.5
57	2.3	2.3
58	8.3	8.3
59	4.6	4.6
60	4.1	4.1
61	4.2	4.2
62	4.2	4.2
63	2.3	2.3
64	2.3	2.3
65	0.6	0.6
66	3.1	3.1
67	4.2	4.2
68	4.2	4.2
69	2.3	2.3
70	0	0
71	0.2	0.2
72	0.2	0.2
73	0.3	0.3
74	2.3	2.3
75	2.5	2.5
76	0	0
77	2.6	2.6
78	0.3	0.3
79	0.3	0.3
80	0.2	0.2
81	2.3	2.3
82	0	0.7
83	0	0
84	2.3	2.3
85	2.3	2.3
86	2.3	2.3
87	1.6	1.8
88	2.3	2.3
89	2.3	2.3
90	2.3	2.3
91	0.1	0
92	0	0
93	0	2.4
94	0	1.8
95	0	0
96	2.6	2.3
97	2.6	2.3
98	2.6	2.3
99	4.9	4.9
100	0	4.9

MODE PIN NO.	REC	PLAY
101	0	0
102	0	0
103	0	0
104	2.3	2.3
105	2.3	2.3
106	2.4	2.4
107	4.9	4.9
108	0	0
109	0	0
110	0	0
111	0	1.8
112	2.5	2.5
113	0.7	0.7
114	0	0
115	2.5	2.5
116	2.5	2.5
117	2.5	2.5
118	0	0
119	2.5	2.5
120	4.5	4.5
IC3001		
1	2.0	2.4
2	0	0
3	0	2.4
4	2.4	0
5	0.1	0
6	2.4	0
7	0	2.3
8	0	0
9	4.8	4.8
10	4.8	4.8
11	0	0.2
12	0.5	1
13	0	1.8
14	4.6	4.5
15	4.5	0
16	0.5	0.5
17	0	0
18	0	0
19	0.6	0.6
20	4.4	4.3
21	0	3.8
22	1.9	1.7
23	0	0
24	4.7	4.8
25	0	0
26	4.8	0
27	4.8	4.8
28	4.8	4.8
29	4.8	4.8
30	0	0
31	4.8	4.8
32	0.5	0.5
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	4.8
39	4.1	4.2
40	0	0
41	0	0
42	4.3	4.3
43	0	0
44	0	0
45	4.8	4.8
46	0	0
47	0	0
48	0.2	0.1
49	4.0	4.0
50	4.5	4.5
51	4.8	4.8
52	1.0	1.0
53	4.2	0
54	2.4	2.4
55	2.4	2.4
56	4.8	4.8
57	4.8	4.8
58	4.8	0
59	0	0
60	4.8	4.8
61	4.8	0
62	0	0
63	0	0
64	1.4	1.4
65	0.8	0.7
66	4.8	0
67	0	2.3
68	0	0
69	2.3	2.3
70	4.8	4.8
71	0	4.8
72	4.7	4.8
73	4.7	4.8
74	0	0
75	0	4.4
76	0	4.5
77	0	0
78	0	0
79	4.8	4.8
80	0	0

MODE PIN NO.	REC	PLAY
81	0	0
82	4.8	4.8
83	2.4	2.4
84	0	0
85	0	0
86	0	4.8
87	4.8	0
88	4.8	0
89	0	0
90	0	0
91	2.7	2.6
92	4.8	4.8
93	0	0
94	0	0
95	0	0.8
96	0	0
97	0	0
98	0.3	0.4
99	0	0
100	2.4	2.4
101	2.6	2.6
102	1.2	1.2
103	4.8	4.8
104	0	0
105	4.7	4.7
106	0	4.6
107	0	0
108	0	1.2
109	0	4.8
110	0	0
111	0	0
112	0	0
IC3002		
1	4.9	4.9
2	4.9	4.9
3	0	0
IC3003		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.6	4.6
6	4.5	4.5
7	0	0
8	4.9	4.9
IC3004		
1	11.4	11.4
2	0.2	0.2
3	0	0
4	0.2	0.2
5	11.4	11.4
6	11.4	11.4
7	0	0
8	0	0
9	0	0
IC3601		
1	0	0
2	0	0
3	0	0
4	0	3.9
5	4.5	4.5
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	4.8	4.8
14	3.6	3.6
15	0	0
16	4.9	4.9
IC3651		
1	0	0
2	0	0
3	0	0
4	0	0
5	3.1	3.1
6	4.5	4.5
7	0	0
8	0	0
9	0	
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	4.9	4.9
IC5101		
1	64.6	62.7
2	-	-
3	0	0
4	-	-
5	-	-
IC5301		
1	5.6	5.6
2	5.1	5.1
3	4.5	4.5
4	0	0
5	11.9	11.9

MODE PIN NO.	REC	PLAY
6	11.2	11.2
7	12.0	12.0
8	5.6	5.6
9	1.3	1.3
10	4.0	4.0
CN1		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.4	2.2
6	2.4	2.2
7	2.4	2.2
8	2.4	2.2
9	2.7	2.2
10	2.7	2.2
11	2.7	2.2
12	0	0
13	0	0
CN301[HR-S9850M]		
1	2.4	2.4
2	0	0
3	0	5.1
4	2.5	0
5	4.9	2.7
6	0	0
CN302[HR-S9850MS]		
1	0	2.5
2	2.3	2.3
3	4.9	4.9
4	0.4	0.4
5	0	0
CN501		
1	2.4	2.4
2	0	0
3	2.1	2.3
4	4.9	4.9
5	2.0	2.1
6	0	4.4
7	3.3	3.3
8	0	0
9	0	2.8
10	0	0
11	0	4.6
12	4.0	4.0
13	0	0
14	0.7	0
15	2.4	2.4
16	0	0
17	2.4	2.4
CN502		
1	0.2	4.4
2	4.0	4.0
3	4.6	4.6
4	0	0
5	4.8	4.8
6	4.8	4.8
7	0	0
8	0	0
9	0	0
10	0	2.1
11	3.3	3.3
12	0	0
13	2.7	2.7
14	0	0
15	0	0
16	2.4	0
17	1.3	2.3
18	4.5	4.5
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	2.3	2.4
26	0	0
27	2.4	2.3
28	0	0
29	0	2.4
30	2.7	2.8
CN902		
1	0.2	0.2
2	0	0
3	0.2	0.2
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
CN903		
1	3.0	3.0
2	0	0
3	0	0
4	0.1	0.1
5	0	0
6	2.3	2.3
7	0	0

MODE PIN NO.	REC	PLAY
8	10.6	10.6
9	0	0
10	10.6	10.6
11	0.7	0.5
12	4.8	4.8
CN904		
1	0	0
2	4.5	4.5
3	4.8	4.8
4	0	0
5	2.8	2.8
6	4.2	4.2
7	1.0	1.0
8	0	0
9	0	0
10	4.1	4.1
11	0	0
12	2.7	2.7
CN905		
1	4.5	4.5
2	4.5	4.4
3	4.7	4.7
4	0	0
5	0	0
CN907		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.1	2.4
7	2.1	2.4
CN2002		
1	0	0
2	0	0
CN2051		
1	7.2	0.2
2	0	0
3	0	0
4	0	0
CN3001		
1	11.9	12
2	0	0
3	1.3	1.3
4	0	0
5	1.2	1.2
CN3002		
1	0.3	0.3
2	0.3	0.3
CN3003		
1	0	0
2	2.4	2.4
3	2.5	2.5
4	4.9	4.9
5	0	0
6	4.8	4.8
7	0	0
8	11.1	11.2
CN3004		
1	4.8	4.8
2	4.8	4.8
3	0	0
4	0	0
CN3011		
1	4.8	4.8
2	0	0
3	4.7	4.8
4	4.8	4.8
5	4.2	4.2
6	4.8	4.8
7	1.1	1.1
8	4.1	4.1
9	4.8	4.8
10	0	0
11	0	0
12	-18	-18
13	-14.4	-14.4
14	-26.9	-26.9
CN3012		
1	0	0
2	0	0
3	0	0
4	4.8	4.8
CN6102[HR-S9850MS]		
1	0	0
2	0.3	4.9
3	0	0
4	0	0
5	0	0
6	0	0

MODE PIN NO.	REC	PLAY
7	11.4	11.4
8	11.4	11.4
9	4.9	0
10	0.3	0.3
CN6701		
1	0	0
2	4.5	4.5
3	4.5	4.5
4	4.8	4.8
5	0.2	0.2
6	0.2	0.2
7	4.8	4.8
8	0	0
9	0	0
10	0	0
CN7103		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.3	2.3
7	5.0	5.0
8	4.8	4.8
9	5.0	5.0
10	4.8	4.8
11	4.4	4.4
12	3.9	3.9
13	5.0	5.0

<3D/TBC(2M)>

MODE PIN NO.	REC	PLAY
IC1401	-	-
CN1201		
1	2.4	2.4
2	0	0
3	2.1	2.3
4	4.9	4.9
5	2.0	2.1
6	0	4.4
7	3.3	3.3
8	0	0
9	0	2.8
10	0	0
11	0	4.6
12	4.0	4.0
13	0	0
14	0.7	0
15	2.4	2.4
16	0	0
17	2.4	2.4

<TERMINAL>

MODE PIN NO.	REC	PLAY
IC201		
1	0	0
2	2.5	2.5
3	4.9	4.9
4	0	0
5	4.4	4.4
6	2.4	2.4
7	2.4	2.4
8	4.9	4.9
9	3.3	3.3
10	4.2	4.2
11	1.6	1.6
12	4.9	4.9
13	2.7	2.7
14	2.7	2.7
15	0	0
16	1.2	1.2
17	0	0
18	4.9	4.9
19	2.3	2.3
20	0	0
21	2.3	2.3
22	0.5	0.5
23	4.9	4.9
24	2.9	2.9
25	2.5	2.5
26	4.9	4.9
27	4.6	4.6
28	3.5	3.5
29	4.9	4.9
30	4.9	4.9
IC901	-	-
CN911		
1	0	0
2	3.0	3.1
3	0	0
4	2.4	2.4
5	0	0
6	2.4	2.3
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	5.4	5.4
13	0	0
14	0.1	0.1
CN912		
1	5.0	5.0
2	4.4	4.4
3	4.0	4.0
4	5.0	5.0
5	0	0
6	0.3	0.3
7	5.0	5.0
8	5.0	5.0
CN913		
1	3.0	3.0
2	0	0
3	0	0
4	0.1	0.1
5	0	0
6	2.3	2.3
7	0	0
8	10.6	10.6
9	0	0
10	10.6	10.6
11	0.7	0.5
12	4.8	4.8
CN914		
1	0	0
2	4.5	4.5
3	4.8	4.8
4	0	0
5	2.8	2.8
6	4.2	4.2
7	1.0	1.0
8	0	0
9	0	0
10	4.1	4.1
11	0	0
12	2.7	2.7
CN915		
1	4.5	4.5
2	4.5	4.4
3	4.7	4.7
4	0	0
5	0	0
CN917		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0

<DEMOD>

MODE PIN NO.	REC	PLAY
IC6701		
1	4.3	4.3
2	1.5	1.5
3	1.5	1.5
4	0	0
5	2.0	2.0
6	1.9	1.9
7	0.2	0.2
8	0	0
9	0	0
10	3.6	3.6
11	3.6	3.6
12	4.5	4.5
13	4.5	4.5
14	2.2	2.2
15	2.1	2.1
16	0	0
17	0.3	0.3
18	0.3	0.3
19	4.5	4.5
20	0	0
21	0.3	0.3
22	4.7	4.7
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	2.4	2.4
31	2.4	2.4
32	0	0
33	4.7	4.7
34	3.8	3.8
35	0	0
36	2.4	2.4
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	2.5	2.5
43	2.4	2.4
44	0	0
CN6701		
1	0	0
2	4.5	4.5
3	4.5	4.5
4	4.8	4.8
5	0.2	0.2
6	0.2	0.2
7	4.8	4.8
8	0	0
9	0	0
10	0	0

<S-SUB>

MODE PIN NO.	REC	PLAY
IC501	-	-
IC502	-	-
CN511		
1	0.2	4.4
2	4.0	4.0
3	4.6	4.6
4	0	0
5	4.8	4.8
6	4.8	4.8
7	0	0
8	0	0
9	0	0
10	0	2.1
11	3.3	3.3
12	0	0
13	2.7	2.7
14	0	0
15	0	0
16	2.4	0
17	1.3	2.3
18	4.5	4.5
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	2.3	2.4
26	0	0
27	2.4	2.3
28	0	0
29	0	2.4
30	2.7	2.8
CN512		
1	0	0
2	3.0	3.1
3	0	0
4	2.4	2.4
5	0	0
6	2.4	2.3
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	5.4	5.4
13	0	0
14	0.1	0.1
CN513[HR-S9850MS]		
1	4.9	4.9
2	4.9	4.9
3	2.8	2.8
4	0	0
5	5.6	5.6
6	0	0
7	2.3	2.3
8	0	0
9	1.2	1.2

<NAVIGATION>

MODE PIN NO.	REC	PLAY
IC3301	-	-
IC3401		
1	0.4	0.4
2	4	4
3	5	5
4	5	5
5	5	5
6	0	0
7	0	0
8	0	0
9	4.8	4.8
10	0	0
11	0	0
12	4.4	4.4
13	0	0.3
14	4.4	4.4
15	3.9	3.9
16	5.0	5.0
IC3402		
1	0.1	0.3
2	5.0	5.0
3	0	0.3
4	0	0.3
5	0	0.3
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	5.0	5.0
13	0	0.3
14	5.0	5.0
15	5.0	5.0
16	5.0	5.0
IC3403	-	-
IC3405		
1	0	0
2	5.0	5.0
3	5.0	5.0
4	0	0
5	5.0	5.0
6	5.0	5.0
7	0	0
8	5.0	5.0
IC3406		
1	0	0
2	5.0	5.0
3	5.0	5.0
4	0	0
5	5.0	5.0
6	5.0	5.0
7	0	0
8	5.0	5.0
CN3401		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	2.3	2.3
7	5.0	5.0
8	4.8	4.8
9	5.0	5.0
10	4.8	4.8
11	4.4	4.4
12	3.9	3.9
13	5.0	5.0
CN3402		
1	5.0	5.0
2	5.0	5.0
3	0.3	0.3
4	0	0
5	5.0	5.0
6	4.0	4.0
7	4.4	4.4
8	5.0	5.0

<SW/DISPLAY>

MODE PIN NO.	REC	PLAY
IC7001		
1	4.9	4.9
2	0	0
3	0	0
4	0	0
5	1.6	1.6
6	0	0
7	0	0
8	4.2	4.2
9	3.9	3.9
10	0	0
11	0	0
12	0	0
13	0	0
14	4.9	4.9
15	-8.3	-15.5
16	-13.3	-17.2
17	-13.3	-13.3
18	-21.1	-17.2
19	-13.3	-13.3
20	-13.3	-13.3
21	-18	-14
22-43	-	-
44	2.7	2.7
IC7002		
1	5.0	5.0
2	5.0	5.0
3	0	0
CN7001		
1	-26.9	-26.9
2	-14.4	-14.4
3	-18	-18
4	0	0
5	0	0
6	4.8	4.8
7	4.1	4.1
8	1.1	1.1
9	4.8	4.8
10	4.2	4.2
11	4.8	4.8
12	4.7	4.8
13	0	0
14	4.8	4.8
FW7001		
1	5.1	5.1
2	0	0

<REC. SAFETY>

MODE PIN NO.	REC	PLAY
FW7001		
1	5.1	5.1
2	0	0

<JACK>

MODE PIN NO.	REC	PLAY
CN7191		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0.2	0.2
10	0	0
11	0.2	0.2

<ADV. JOG>

MODE PIN NO.	REC	PLAY
CN7004		
1	4.8	4.8
2	0	0
3	0	0
4	0	0

<AUDIO ERASE>

MODE PIN NO.	REC	PLAY
CN2052		
1	7.2	0.2
2	0	0
3	0	0
4	0	0

<SECAM>[HR-S9850MS]

MODE PIN NO.	REC	PLAY
IC301	-	-
CN301		
1	0	0
2	2.3	2.3
3	4.9	4.9
4	0.4	0.4
5	0	0
CN302		
1	2.4	2.4
2	0	0
3	0	0
4	2.5	2.5
5	4.9	4.9
6	0	0

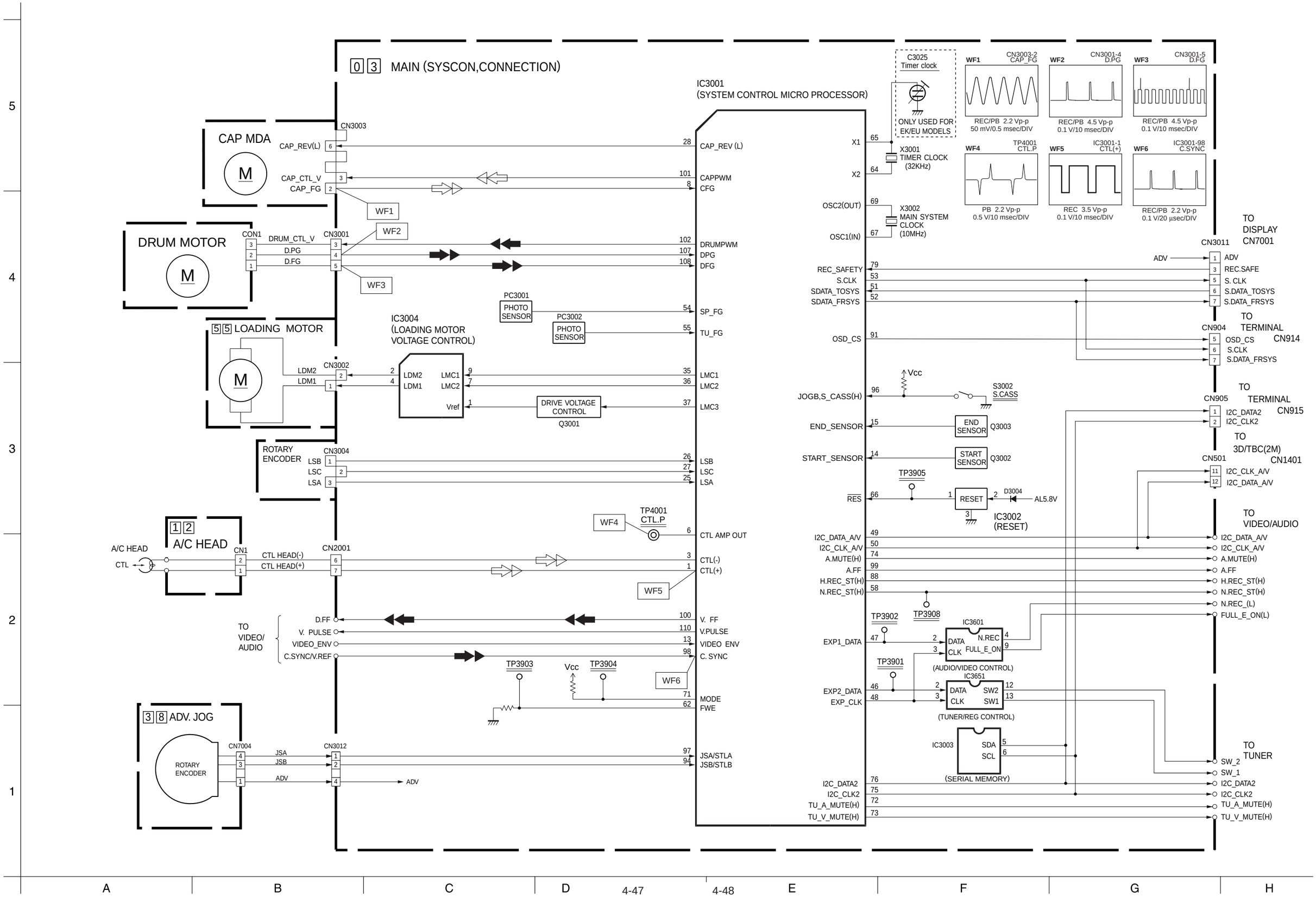
<P/S CONVERTER>[HR-S9850MS]

MODE PIN NO.	REC	PLAY
IC3502		
1	6.2	6.2
2	6.8	6.8
3	6.2	6.2
4	6.8	6.8
5	9.1	9.1
6	9.3	9.3
7	3.9	3.9
8	3.0	3.0
9	3.0	3.0
10	3.9	3.9
11	0	0
12	2.2	2.2
13	11.0	11.0
14	5.4	5.4
15	3.3	3.3
16	7.5	7.5
17	2.8	2.8
18	7.3	7.3
19	2.3	2.3
20	7.3	7.3
21	2.1	2.1
22	3.6	3.6
23	7.2	7.2
24	1.3	1.3
25	0	0
26	0	0
27	0	0
28	5.5	11.0
IC3503		
1	4.9	4.9
2	0	0
3	0	0
4	0	0
5	0.6	0.6
6	0	0
7	0	0
8	0	0
9	4.9	4.9
10	0	0
11	2.9	2.9
12	2.9	2.9
13	0	0
14	1.4	1.4
15	0	0
16	1.4	1.4
IC3504		
1	0	0
2	0.7	0.7
3	9.9	9.9
4	2.2	2.2
5	0	0
6	1.2	1.2
7	0	0
8	5.9	5.9
9	0	0
10	5.7	5.7
11	1.7	1.7
12	6.6	6.6
13	0	0
14	5.7	5.7
15	11.4	11.4
16	5.7	5.7
17	5.1	5.1
18	5.1	5.1
IC3505		
1	2.5	2.5
2	0	0
3	2.5	2.5
4	2.4	2.4
5	2.3	2.3
6	4.7	4.7
7	2.4	2.4
8	4.7	4.7
9	2.2	2.2
10	0	0
11	2.2	2.2
12	0	0
13	2.4	2.4
14	2.2	2.2
15	2.3	2.3
16	0.9	0.9
17	2.5	2.5
18	2.6	2.6
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	2.4	2.4
25	0.4	0.4
26	4.7	4.7
27	1.9	1.9
28	0	0
29	2.2	2.2
30	0	0
31	2.5	2.5
32	4.8	4.8
IC3506		
1	2.5	2.5
2	0	0

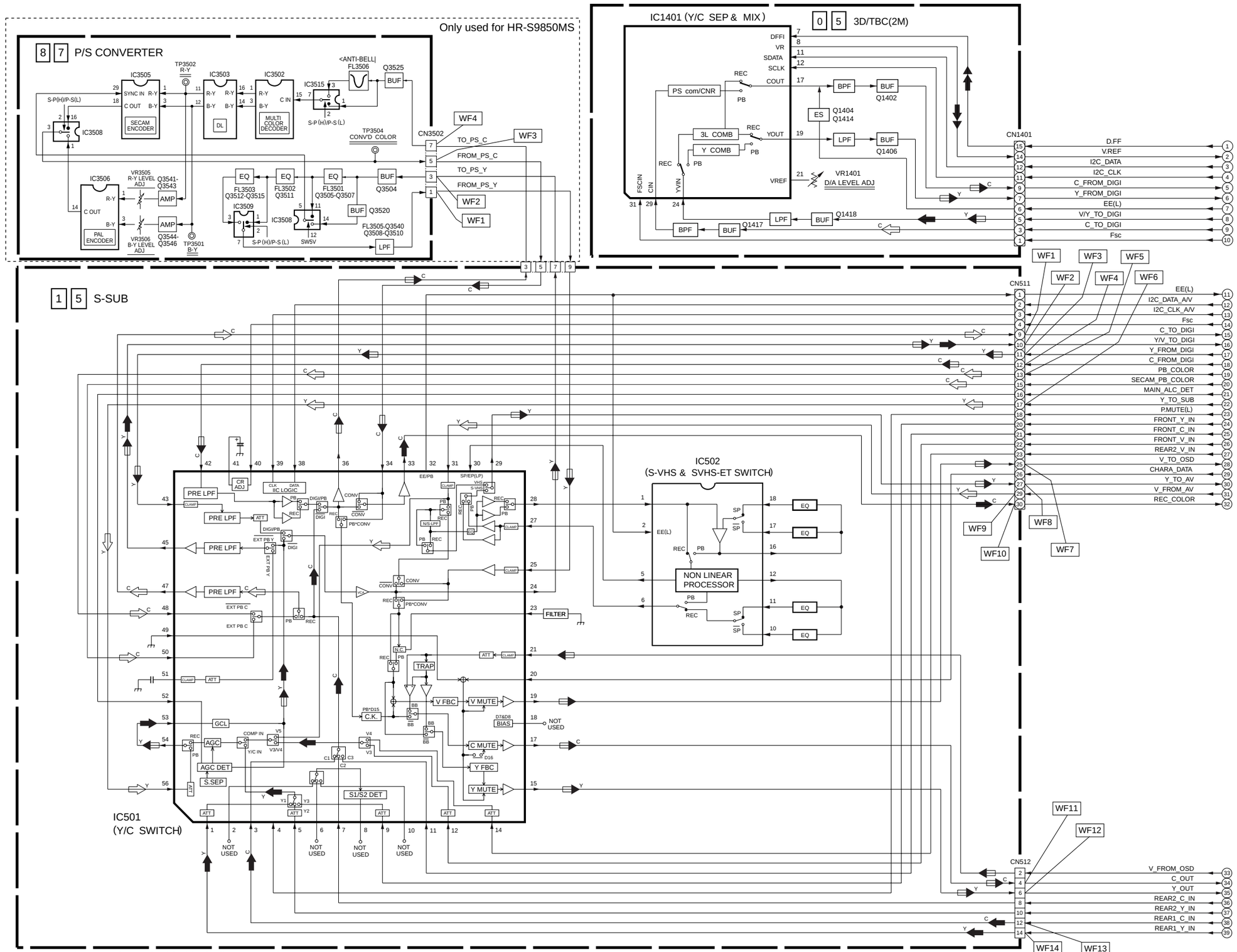
MODE PIN NO.	REC	PLAY
3	2.5	2.5
4	2.4	2.4
5	2.1	2.1
6	2.0	2.0
7	2.2	2.2
8	4.8	4.8
9	2.2	2.2
10	0	0
11	2.2	2.2
12	2.0	2.0
13	2.5	2.5
14	1.8	1.8
15	0.9	0.9
16	0.7	0.7
17	0	0
18	0	0
19	0	0
20	0	0
21	2.5	2.5
22	2.0	2.0
23	1.3	1.3
24	2.0	2.0
IC3508		
1	6.3	6.3
2	0	0
3	5.6	5.6
4	0	0
5	2.8	2.8
6	2.5	2.5
7	0	0
8	3.1	3.1
9	3.2	3.2
10	0	0
11	3.6	3.6
12	4.8	4.8
13	11.3	11.3
14	3.5	3.5
15	0	0
16	6.3	6.3
IC3509		
1	6.3	6.3
2	0	0
3	6.3	6.3
4	0	0
5	0	0
6	11.2	11.2
7	5.6	5.6
8	0	0
IC3510		
1	5.5	11.0
2	11.3	11.0
3	0	0
4	0	0
5	0	11.3
6	0	11.3
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	11.3
14	11.3	11.3
IC3512		
1	4.9	4.9
2	2.4	2.4
3	4.2	4.2
4	4.9	4.9
5	2.4	2.4
6	2.4	2.4
7	0	0
8	4.8	4.8
9	0	0
10	4.9	4.9
11	0.5	0.5
12	3.9	3.9
13	4.9	4.9
14	4.9	4.9
IC3513		
1	0	0
2	4.4	4.4
3	4.9	4.9
4	2.2	2.2
5	4.9	4.9
6	0.7	0.7
7	4.2	4.2
8	0	0
9	1.0	1.0
10	3.9	3.9
11	4.9	4.9
12	0.6	0.6
13	4.9	4.9
14	2.0	2.0
15	0	0
16	4.9	4.9
IC3514		
1	0	0
2	0.6	0.6
3	4.9	4.9
4	0.6	0.6
5	0.3	0.3

MODE PIN NO.	REC	PLAY
6	0	0
7	4.6	4.6
8	0	0
9	0	0
10	4.2	4.2
11	4.9	4.9
12	4.6	4.6
13	4.2	4.2
14	0	0
15	2.6	2.6
16	4.9	4.9
IC3515		
1	6.3	6.3
2	0	0
3	6.3	6.3
4	0	0
5	0	0
6	11.3	11.3
7	5.6	5.6
8	0	0
IC3517		
1	2.0	2.0
2	4.3	4.3
3	0.6	0.6
4	4.8	4.8
5	0	0
6	2.1	2.1
7	4.9	4.9
8	2.5	2.5
IC3518		
1	3.9	3.9
2	0	0
3	0	0
4	0.3	0.3
5	11.0	11.0
CN3501		
11	0.3	0.3
12	4.9	0
13	11.4	11.4
14	11.4	11.4
15	0	0
16	0	0
17	0	0
18	0	0
19	0.3	4.9
20	0	0
CN3502		
1	1.2	1.2
2	0	0
3	2.3	2.3
4	0	0
5	5.6	5.6
6	0	0
7	2.8	2.8
8	4.9	4.9
9	4.9	4.9

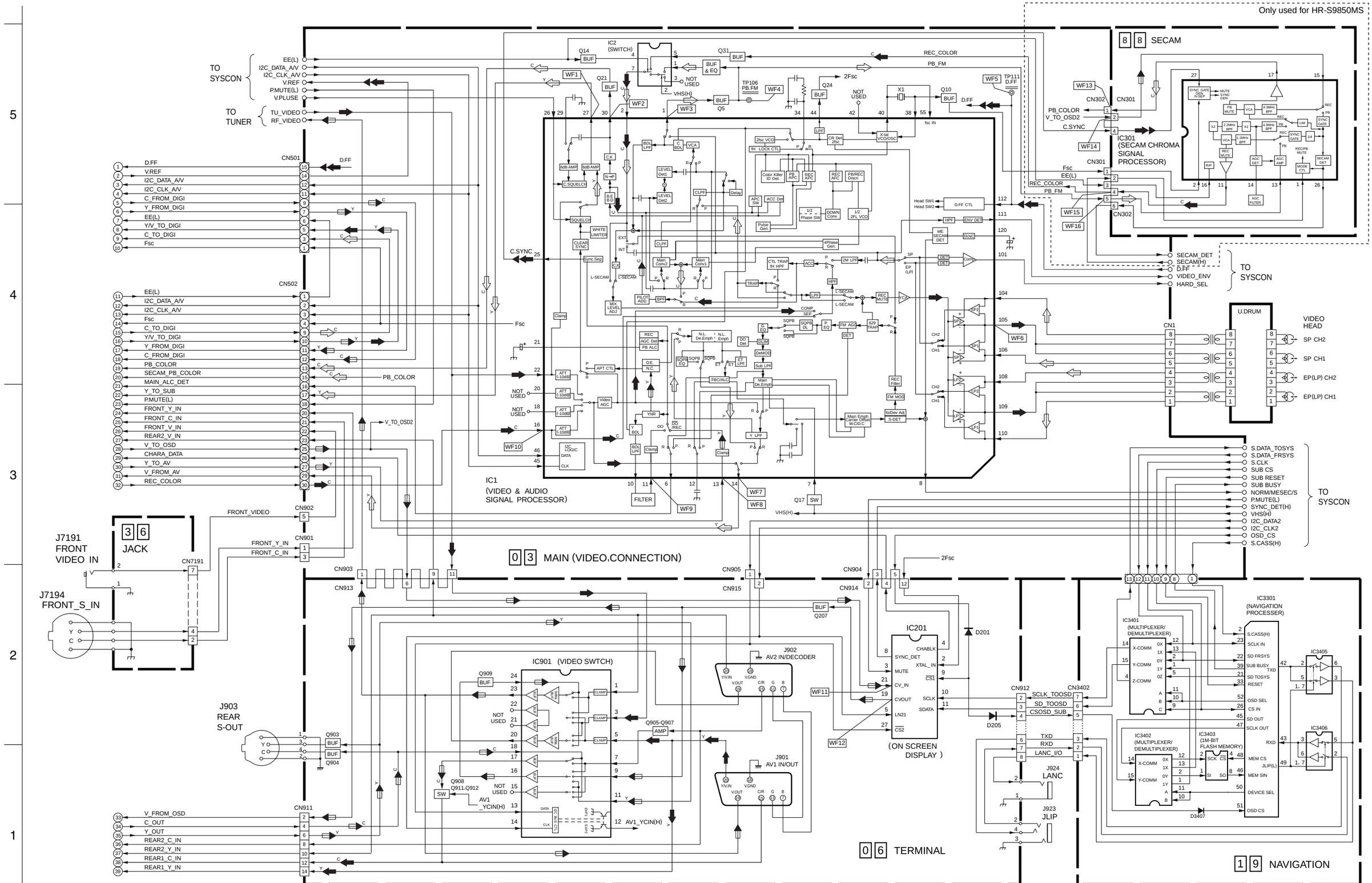
4.27 SYSTEM BLOCK DIAGRAM



4.28 VIDEO BLOCK DIAGRAM

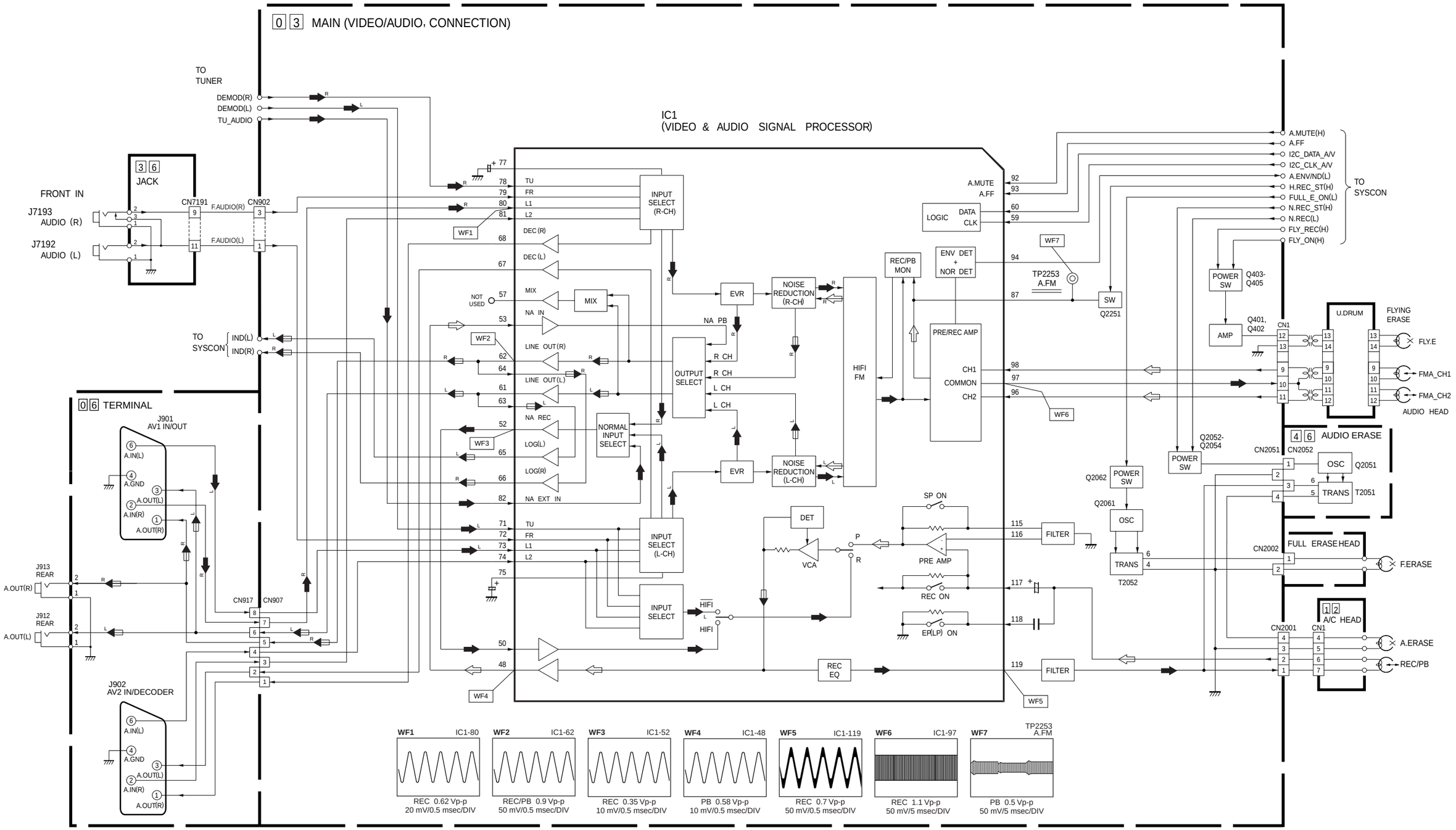


Note : For the waveforms in this block diagram, refer to page 4-43.



Note : For the waveforms in this block diagram, refer to page 4-43.

4.29 AUDIO BLOCK DIAGRAM



E & O.E. No.82888
E & O.E. No.82889
(VP)-V14S35

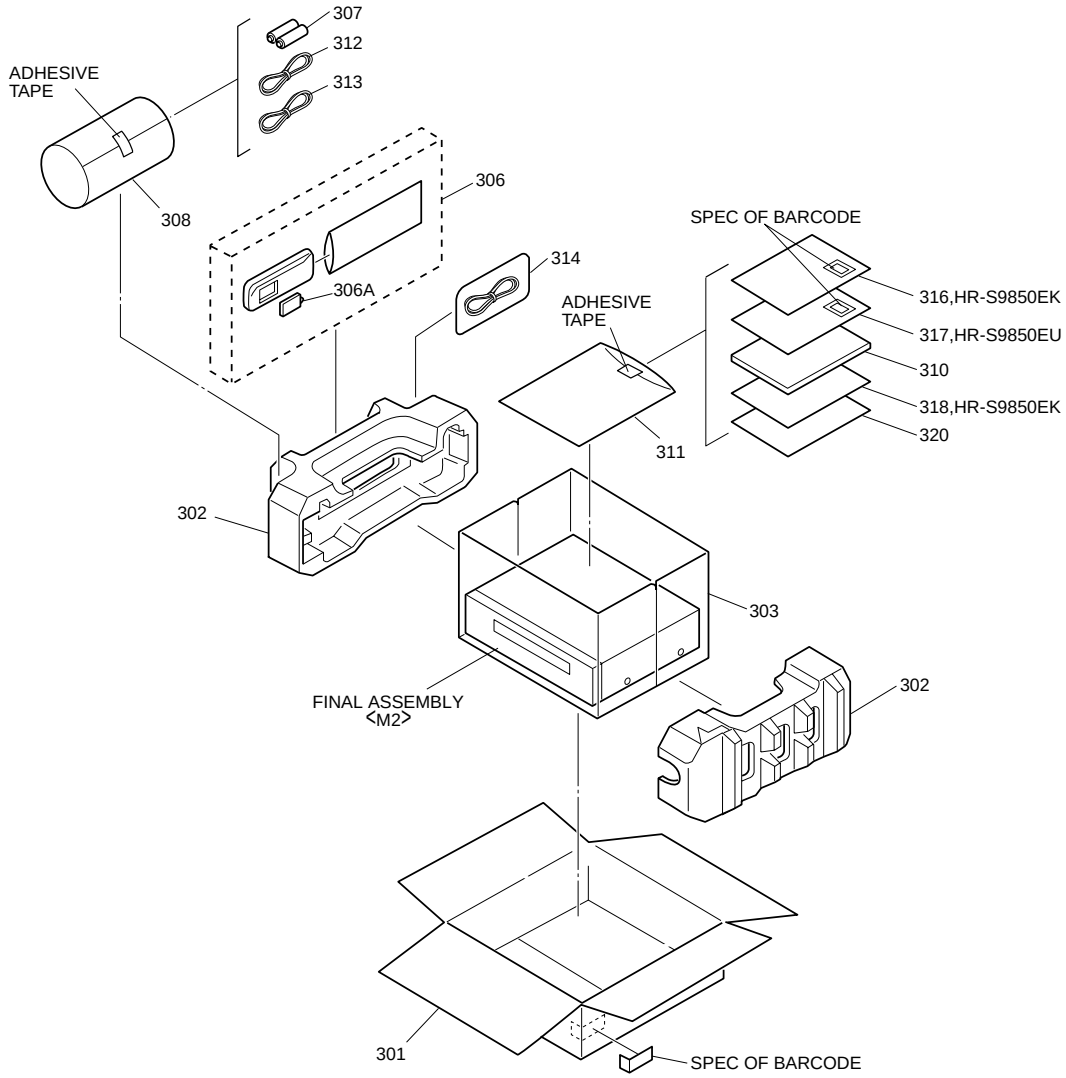
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				

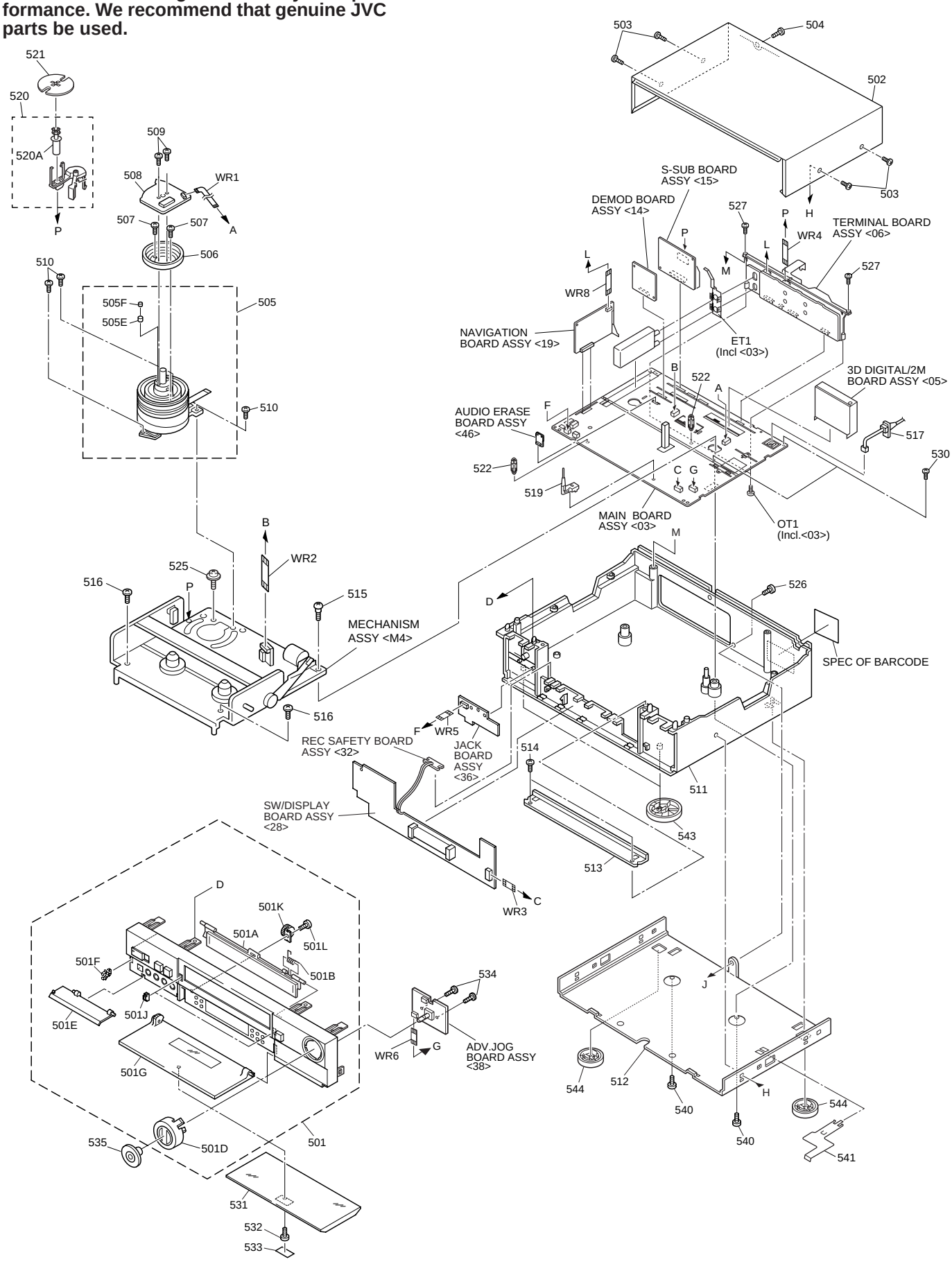
PACKING AND ACCESSORY ASSEMBLY <M1>

	301	LP31003-002A	PACKING CASE
	302	LP31008-001A	CUSHION ASSY
	303	PQM30021-95	POLY BAG
	306	LP20667-008B	REMOTE CONTROLLER
	306A	LP40225-004A	COVER(BATTERY)
	307	–	BATTERY,X2,(“R6”TYPE)
	308	QPC02202230P	POLY BAG
⚠	310	LPT0480-001A	INST.BOOK(EN),S9850EK
⚠		LPT0488-001A	INST.BOOK(EN),S9850EU
⚠		LPT0488-002A	INST.BOOK(GE),S9850EU
⚠		LPT0488-003A	INST.BOOK(FR),S9850EU
⚠		LPT0488-004A	INST.BOOK(DU),S9850EU
⚠		LPT0488-005A	INST.BOOK(SP),S9850EU
⚠		LPT0488-006A	INST.BOOK(IT),S9850EU
⚠		LPT0488-007A	INST.BOOK(DA),S9850EU
⚠		LPT0488-008A	INST.BOOK(FI),S9850EU
⚠		LPT0488-009A	INST.BOOK(SW),S9850EU
⚠		LPT0488-010A	INST.BOOK(NO),S9850EU
⚠		LPT0488-011A	INST.BOOK(PT),S9850EU
⚠		LPT0488-012A	INST.BOOK(GR),S9850EU
⚠		LPT0488-013A	INST.BOOK(CZ),S9850EU
⚠		LPT0488-014A	INST.BOOK(PO),S9850EU
⚠		LPT0488-015A	INST.BOOK(HU),S9850EU
	311	QPC02503530P	POLY BAG
	312	PEAC0300-02	RF CABLE
	313	QAM0004-002	S CABLE
	314	QAL0095-005	LED CABLE ASSY
	316	BT-54008-2	GUARANTY CARD,S9850EK
	317	BT-54013-2	WARRANTY CARD,S9850EU
	318	LYT0194-001B	Q.CARD(JUK),S9850EK
	320	LP40605-001A	SHEET

5.2 FINAL ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

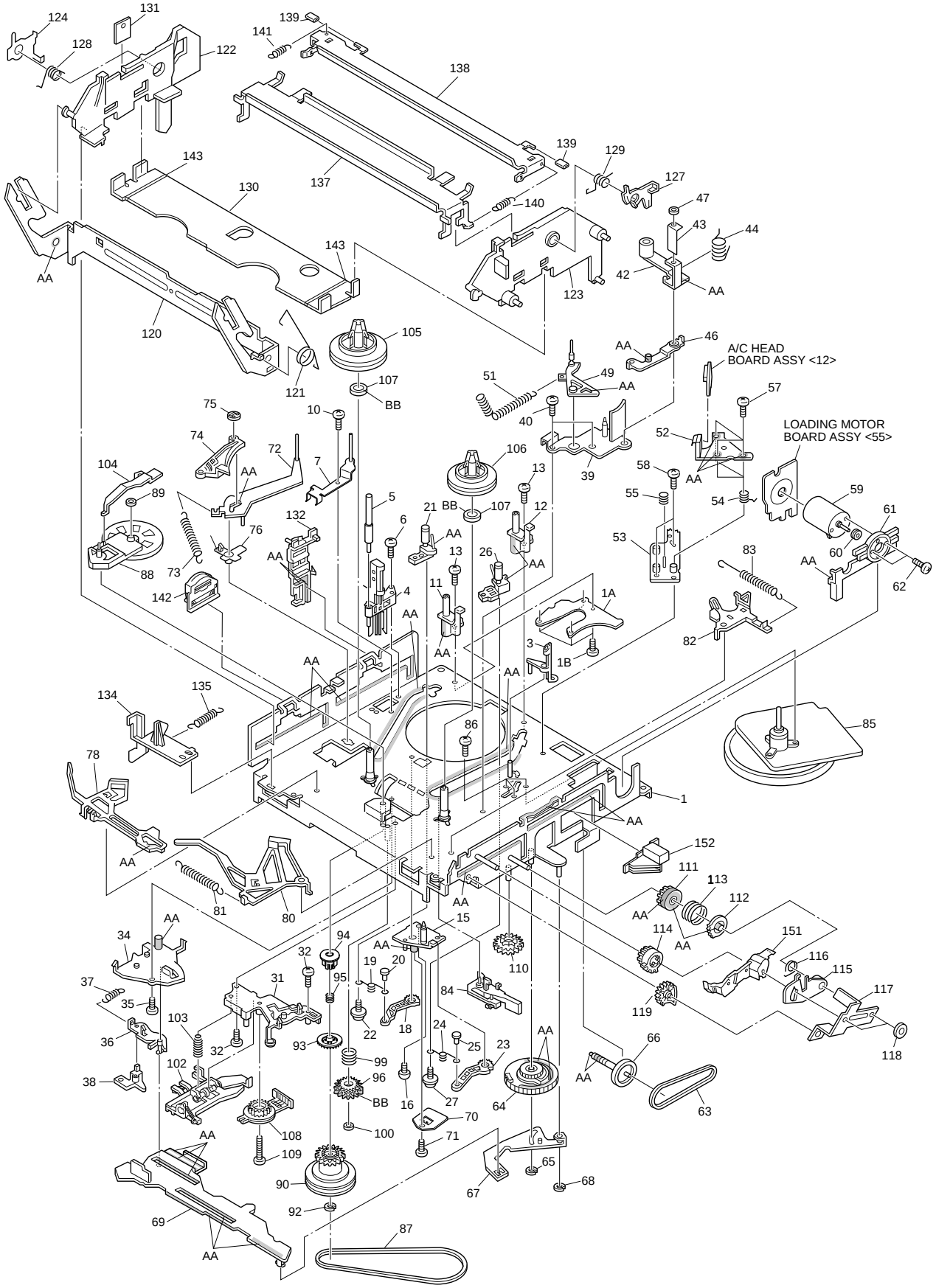
****

FINAL ASSEMBLY <M2>

	⚠	501	LP10353-004C	FRONT PANEL ASSY,S9850EU
	⚠		LP10353-005C	FRONT PANEL ASSY,S9850EK
		501A	LP20968-009A	CASSETTE DOOR
		501B	PQ46448	TORSION SPRING
		501D	LP31002-001A	ORNAMENT
		501E	LP20970-004A	DOOR(JACK)
		501F	PU60109	CATCHER
		501G	LP20969-001A	DOOR
		501J	QZW0063-001	MAGNET LATCH,X2
		501K	QZW0055-003	DAMPER
		501L	QYTDSF3010Z	SCREW,DAMPER
	⚠	502	PQ11922-54-14	TOP COVER
		503	QYTDSF3010R	SCREW,X4,TOP COVER(SIDE)
		504	QYTDSF3010M	SCREW,TOP COVER(REAR)
		505	LP20981-013A	DRUM SUB ASSY
		505E	LP40323-001A	CONTACT
		505F	LP30004-014A	COMPRESSION SPRING
		506	PDZ0179-1-4	ROTOR ASSY
		507	QYSPSP3006Z	SCREW,X2,ROTOR
	⚠	508	QAR0169-002	STATOR ASSY
		509	QYSPSPH2606Z	SCREW,X2,STATOR
		510	QYTDST2610Z	SCREW,X3 DRUM
	⚠	511	LP10140-003G	BOTTOM CHASSIS
	⚠	512	PQ11921-1-4	BOTTOM COVER
		513	LP30312-001B	BRACKET(CHASSIS)
		514	QYTDSF3010Z	SCREW,X2 BRACKET(CHASSIS)
		515	LP40700-001A	SPECIAL SCREW,MECHA
		516	QYTDSF3010Z	SCREW,X2 MECHA
	⚠	517	QMP4A10-170	POWER CORD,S9850EU
	⚠		QMP51K0-170-K	POWER CORD,S9850EK
		519	LP40407-001A	KNOB ASSY
		520	LP40370-001E	ROLLER ARM ASSY
		520A	PDM4311A-1	ROLLER ASS'Y
		521	PQ45160	INERTIA PLATE
		522	LP40226-001A	PC SUPPORT,X2
		525	PQ40413	SPECIAL SCREW,MECHA
		526	QYTDSF3010M	SCREW,TERMINAL(REAR)
		527	QYTPSFG3010Z	SCREW,X2 TERMINAL(TOP)
		530	QYTDSF3010Z	SCREW,X2 MAIN
		531	LP30806-002A	WINDOW(DOOR)
		532	QYSLSF2040D	SCREW,WINDOW(DOOR)
		533	LP40635-002A	S-VHS ET MARK
		534	QYTDSF2608Z	SCREW,X2,ADV.JOG
		535	LP31019-005C	KNOB ASSY
		540	QYTDSF3010Z	SCREW,X2 BOTTOM COVER
		541	LP40659-001B	EARTH PLATE(2),BOTTOM COVER
		543	PQ46617C	FOOT ASSY,X2
		544	PQ35504	FOOT(2),X2
		WR1	QUQ112-0720CG	FFC WIRE,AC HEAD
		WR2	QUQ212-0518CG	FFC WIRE,DRUM
		WR3	QUQ112-1414CG	FFC WIRE,DISPLAY
		WR4	QUQ112-1407CG	FFC WIRE,TERMINAL
		WR5	QUQ112-1115CG	FFC WIRE,JACK
		WR6	QUQ212-0416CG	FFC WIRE,ADV.JOG
		WR8	QUQ112-0826CG	FFC WIRE,NAVIGATION

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

5.3 MECHANISM ASSEMBLY <M4>



Classifi-cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

MECHANISM ASSEMBLY <M4>

		1	LP20821-002F	MAIN DECK ASSY
		1A	LP40275-004B	PLATE(SUPPLY)
		1B	QYTDST2605Z	SCREW,X4
		3	LP30492-002B	GIDE POLE GUARD
		4	NAH0001-001	FULL ERASE HEAD
		5	LP40098-001B	GUIDE POLE(SUPPLY)
		6	QYTDST2608Z	SCREW
		7	LP40637-002A	TENSION STUD BASE ASSY
		10	QYTDST2606Z	SCREW
		11	LP30409-002C	UV CATCHER 2(SUPPLY)
		12	LP30409-002C	UV CATCHER 2(TAKE UP)
		13	QYTPST2606Z	SCREW,X2
		14	PQ40919-10	SPACER
		15	LP30223-003C	LOADING ARM GEAR SHAFT
		16	QYTDST2606Z	SCREW
		18	LP30224-001B	LOADING ARM GEAR(SUPPLY)
		19	LP40099-001A	TORSION ARM
		20	LP40100-001A	PIN
		21	LP40101-006A	POLE BASE ASSY(SUPPLY)
		22	QYSPSTG2606Z	SCREW
		23	LP40103-002B	LOADING ARM GEAR(TAKE UP)
		24	LP40099-001A	TORSION ARM
		25	LP40100-001A	PIN
		26	LP40104-006A	POLE BASE ASSY(TAKE UP)
		27	QYSPSTG2606Z	SCREW
		31	LP20233-004B	ROTARY ENCODER GUIDE
		32	QYTPST2606Z	SCREW
		34	LP30226-004E	CONTROL PLATE GUIDE
		35	QYTPST2605Z	SCREW
		36	LP30249-003B	TAKE UP LEVER
		37	LP30003-006A	TENSION SPRING
		38	LP40119-002A	T.UP HEAD
		39	LP20234-004B	LID GUIDE
		40	QYTDST2606Z	SCREW,X2
		42	LP40105-003A	PINCH ROLLER ARM ASSY
		43	LP40753-001A	PINCH ROLLER SHEET 3
		44	LP40148-002A	TORSION SPRING
		46	LP40149-001C	PRESS LEVER ASSY
		49	LP40106-007A	GUIDE ARM ASSY
		51	LP40134-001C	TENSION SPRING
		52	QAH0010-005	AC HEAD
		53	LP30228-001C	HEAD BASE
		54	LP30004-013A	COMPRESSION SPRING,X3
		55	LP40236-001A	COMPRESSION SPRING
		57	LP40213-002B	SPECIAL SCREW,X3
		58	QYTDST2608Z	SCREW,X2
		59	QAR0023-001	LOADING MOTOR
		60	PQ43546-1-2	MOTOR PULLEY
		61	LP30230-003D	MOTOR GUIDE
		62	QYTPSP3003Z	SCREW,X2
		63	LP30005-003A	BELT,LOADING MOTOR
		64	LP20791-002D	CONTROL CAM
		65	PQM30017-24	SLIT WASHER
		66	LP40120-001A	WORM GEAR
		67	LP40107-002A	LINK LEVER ASSY
		68	PQM30017-24	SLIT WASHER
		69	LP10284-002E	CONTROL PLATE
		70	LP40379-001B	CONTROL BRACKET(1)
		71	QYTDSF2608M	SCREW
		72	LP40108-002A	TENSION ARM ASSY
		73	LP30003-010A	TENSION SPRING
		74	LP40109-003D	TENSION BRAKE ASSY
		75	PQ46302-1-3	ADJUST PIN
		76	LP30232-002A	TENSION ARM BEARING
		78	LP40532-009B	MAIN BRAKE ASSY (SUPPLY)
		80	LP40111-014C	MAIN BRAKE ASSY (TAKE UP)
		81	LP30003-029A	TENSION SPRING
		82	LP40112-001F	SUB BRAKE ASSY(TAKE UP)
		83	LP40357-001B	TENSION SPRING
		84	LP40461-001A	CAPSTAN BRAKE ASSY
		85	QAR0132-001	CAPSTAN MOTOR
		86	QYTDSF2606M	SCREW,X3
		87	LP30005-008A	BELT,CAPSTAN MOTOR
		88	LP40114-011B	IDLER ARM ASSY
		89	LP30016-001A	SLIT WASHER
		90	LP40593-003B	CLUTCH UNIT 3
		91	LP30002-097A	SPACER,CAPSTAN MOTOR
		92	PQM30017-47	SLIT WASHER
		93	LP30696-002A	CLUTCH GEAR 4
		94	LP30697-003A	COUPLING GEAR
		95	LP40554-002A	COMPRESSION SPRING
		96	LP40442-001A	DIRECT GEAR
		97	LP30017-019A	SPACER
		99	LP40483-002A	COMPRESSION SPRING
		100	LP30016-001A	SLIT WASHER
		102	LP40484-003B	CHANGE LEVER ASSY
		103	LP40512-002B	COMPRESSION SPRING
		104	LP30236-002C	IDLER LEVER
		105	LP20237-003B	REEL DISK ASSY(SUPPLY)
		106	LP20238-003B	REEL DISK ASSY(TAKE UP)
		107	LP30017-015A	SPACER,X2
		108	QSW0554-003	ROTARY ENCODER
		109	LP40746-001A	SPECIAL SCREW
		110	LP30237-002B	CASSETTE GEAR
		111	LP30239-002G	LIMIT GEAR(1)
		112	LP30240-002G	LIMIT GEAR(2)
		113	LP40136-001E	TORSION SPRING
		114	LP30242-002A	RELAY GEAR
		115	LP30339-002E	OPENER GUIDE
		116	LP40545-001A	TORSION SPRING
		117	LP40214-001B	C.H.BRACKET
		118	PQM30017-47	SLIT WASHER,X2
		119	LP30243-002A	DRIVE GEAR
		120	LP20240-001G	DRIVE ARM
		121	LP40137-001A	TORSION SPRING
		122	LP10081-002P	SIDE HOLDER(L)
		123	LP10082-002U	SIDE HOLDER(R)
		124	LP30255-006B	LOCK LEVER(L)
		127	LP30256-001H	LOCK LEVER(R)
		128	LP40168-003A	TORSION SPRING(L)
		129	LP40218-001B	TORSION SPRING(R)
		130	LP30257-001G	CASSETTE HOLDER
		131	LP40852-001A	EARTH PLATE
		132	LP30244-002G	GUIDE RAIL
		134	LP30245-002F	REC SAFETY LEVER
		135	LP30003-004A	TENSION SPRING
		137	LP20578-001C	TOP GUIDE
		138	LP30500-001C	HOLD PLATE
		139	LP40450-003A	PAD,X2
		140	LP30003-025B	TENSION SPRING
		141	LP30003-024A	TENSION SPRING
		142	LP40481-003A	ROLLER CAM ASSY
		143	LP30019-014A	PAD,X2
		151	LP20324-003C	DOOR OPENER
		152	LP30493-001B	START SENSOR CAP

5.4 ELECTRICAL PARTS LIST

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********				

MAIN BOARD ASSEMBLY <03>

		PW1	LPA10147-02B1 MAIN BOARD ASSY
		IC1	JCP8050-MSA IC
		IC3001	HD6432194SBD16F IC
			or HD64F2194CFD16 IC
		IC3002	S-80727AN-DQ-X IC
			or R3111H271A IC
			or S-80827ANUP-W IC
		IC3003	AT24C16N-10SC-X IC
			or X24C16S IC
			or 24LC16B/SN-X IC
			or BR24C16F IC
		IC3004	BA6956AN IC
		IC3601	BU2090FS IC
		IC3651	BU2090FS IC
		IC5101	STR-G6551 IC
		IC5301	LA5644 IC
		Q5	2SB1218A/QR/-X TRANSISTOR
			or 2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q7	2SD1819A/QRS/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q8	2SD1819A/QRS/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q9	2SB1218A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SA1576A/QR/-X TRANSISTOR
		Q10	2SA1576A/QR/-X TRANSISTOR
		Q17	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q21	2SB1218A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SA1576A/QR/-X TRANSISTOR
		Q24	2SB1218A/QR/-X TRANSISTOR
			or 2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q25	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q38	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q41	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q401	2SA1576A/QR/-X TRANSISTOR
		Q402	2SA1576A/QR/-X TRANSISTOR
		Q403	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q404	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q405	2SA1576A/QR/-X TRANSISTOR
		Q2001	2SC4081/QRS/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q2002	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
		Q2003	DTA144WU TRANSISTOR
			or PDTA144WU TRANSISTOR
			or RN2309 TRANSISTOR
			or UN511E TRANSISTOR
		Q2004	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q2011	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q2052	2SA1576A/QR/-X TRANSISTOR
			or 2SB1218A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q2053	DTC144WU TRANSISTOR
			or PDTC144WU TRANSISTOR
			or RN1309 TRANSISTOR
			or UN521E TRANSISTOR
		Q2054	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SB1218A/QR/-X TRANSISTOR
		Q2061	2SC4081/QRS/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q2062	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SB1218A/QR/-X TRANSISTOR
		Q2251	DTA144WU TRANSISTOR
			or PDTA144WU TRANSISTOR
			or RN2309 TRANSISTOR
			or UN511E TRANSISTOR
		Q2252	DTC114EU TRANSISTOR
			or PDTC114EU TRANSISTOR
			or RN1302 TRANSISTOR
			or UN5211 TRANSISTOR
		Q3001	2SD1819A/QRS/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q3002	PTZ-NV16 PHOTO TRANSISTOR
			or PTZ-NV16A PHOTO TRANSISTOR
		Q3003	PTZ-NV16 PHOTO TRANSISTOR
			or PTZ-NV16A PHOTO TRANSISTOR
		Q3004	2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
		Q3005	2SD1819A/QRS/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q3007	UN521E TRANSISTOR
			or RN1309 TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
			or DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
		Q3009	UN521E	TRANSISTOR
			or RN1309	TRANSISTOR
			or DTC144WU	TRANSISTOR
			or PDTC144WU	TRANSISTOR
		Q4001	UN5211	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or DTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
		Q4002	UN5211	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
			or DTC114EU	TRANSISTOR
		Q4003	UN5211	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or DTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
		Q5301	2SB1256	TRANSISTOR
		Q5302	DTC114TU	TRANSISTOR
			or RN1311	TRANSISTOR
			or UN5215	TRANSISTOR
			or PDTC114TU	TRANSISTOR
		Q5303	2SD2144S/UV/-T	TRANSISTOR
		Q5304	2SD1450/ST/-T	TRANSISTOR
			or 2SD1302/ST/-T	TRANSISTOR
		Q5305	UN5111	TRANSISTOR
			or RN2302	TRANSISTOR
			or PDTA114EU	TRANSISTOR
			or DTA114EU	TRANSISTOR
		Q5310	DTC114EU	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or UN5211	TRANSISTOR
			or RN1302	TRANSISTOR
		Q5311	2SA1576A/RS/-X	TRANSISTOR
		Q5312	2SD2144S/UV/-T	TRANSISTOR
		Q5318	DTA114EU	TRANSISTOR
			or PDTA114EU	TRANSISTOR
			or UN5111	TRANSISTOR
			or RN2302	TRANSISTOR
		Q5320	2SB1256	TRANSISTOR
		Q5321	DTC114TU	TRANSISTOR
			or PDTC114TU	TRANSISTOR
			or UN5215	TRANSISTOR
			or RN1311	TRANSISTOR
		Q5322	DTA114EU	TRANSISTOR
			or PDTA114EU	TRANSISTOR
			or UN5111	TRANSISTOR
			or RN2302	TRANSISTOR
		Q6030	2SB1218A/QR/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q6031	DTC114EU	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or RN1302	TRANSISTOR
			or UN5211	TRANSISTOR
		Q6032	DTC114EU	TRANSISTOR
			or PDTC114EU	TRANSISTOR
			or UN5211	TRANSISTOR
			or RN1302	TRANSISTOR
		Q7201	2SC1317/RS/-T	TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		D6	MTZJ5.1C	ZENER DIODE
		D2001	1SS355	DIODE
		D2202	MTZJ8.2C	ZENER DIODE
		D3001	LNB2301L01VI	LE DIODE
		D3002	1SS133	DIODE
		D3003	RD39ES/B3/-T2	ZENER DIODE
			or MTZJ39C	ZENER DIODE
		D3004	11E2-T5	DIODE
		D3005	11E2-T5	DIODE
		D3007	1SS355	DIODE
		D3008	1SS355	DIODE
		D4001	1SS355	DIODE
		D4002	1SS355	DIODE
		D5001	S1WB/A/60-4102	BRIDGE DIODE
			or S1WB(A)60F4072X	BRIDGE DIODE
			or S1WB/A/60-X	BRIDGE DIODE
		D5101	AU01	FR DIODE
			or ERA18-04-T2	FR DIODE
			or 10ELS4	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5102	AU01	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS4	FR DIODE
			or ERA18-04-T2	FR DIODE
		D5103	AU01Z	FR DIODE
			or PG104RS	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or ERA18-02-T2	FR DIODE
			or 10ELS2	FR DIODE
		D5201	AK04	DIODE
			or 1S4	SB DIODE
			or 11EQS04	SB DIODE
		D5202	FML-12S	FR DIODE
			or SF5LC20U	FR DIODE
			or YG901C2	FR DIODE
			or ER602FCT	FR DIODE
			or FCF06A20	FR DIODE
		D5206	FMB-24	BARRIER DIODE
			or FSQ05A04B	SB DIODE
			or SB640FCT	SB DIODE
			or YG801C04	SB DIODE
			or SF5SC4	SB DIODE
		D5209	ERA18-02-T2	FR DIODE
			or PG104RS	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS2	FR DIODE
		D5210	AU01Z	FR DIODE
			or PG104RS	FR DIODE
			or 10ELS2	FR DIODE
			or ERA18-02-T2	FR DIODE
			or 1SR153-400-T2	FR DIODE
		D5211	AU01Z	FR DIODE
			or ERA18-02-T2	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS2	FR DIODE
			or PG104RS	FR DIODE
		D5214	ERA18-02-T2	FR DIODE
			or 1SR153-400-T2	FR DIODE
			or 10ELS2	FR DIODE
			or PG104RS	FR DIODE
		D5301	MTZJ15A	ZENER DIODE

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
			or RD15ES/B1/-T2	ZENER DIODE	
		D5302	MTZJ6.8A	ZENER DIODE	
			or RD6.8ES/B1/-T2	ZENER DIODE	
		D5303	MTZJ27C	ZENER DIODE	
			or RD27ES/B3/-T2	ZENER DIODE	
		D5304	1SS133	DIODE	
			or 1SS270A	DIODE	
		D5305	11ES2	DIODE	
			or 1A3G	DIODE	
			or ERA15-02-T2	DIODE	
		D5306	MTZJ11C	ZENER DIODE	
			or RD11ES/B3/-T2	ZENER DIODE	
		D5307	1SS133	DIODE	
			or 1SS270A	DIODE	
		D5309	1SS133	DIODE	
			or 1SS270A	DIODE	
		D5310	MTZJ11C	ZENER DIODE	
			or RD11ES/B3/-T2	ZENER DIODE	
		D5314	QUY160-100Y	IM BUS WIRE	
		D5315	11ES2	DIODE	
			or ERA15-02-T2	DIODE	
			or 1A3G	DIODE	
		D5316	QUY160-100Y	IM BUS WIRE	
		D6002	HZ30-2L-T2	ZENER DIODE	
			or HZ30-2LTD	Z DIODE (M)	
		R1	NRVA02D-682X	CMF RESISTOR	6.8kΩ,1/10W
		R2	NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
		R3	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R5	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R7	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R8	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R9	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R23	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R25	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R26	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R27	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R28	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R29	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R30	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R31	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R32	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R34	NDC21HJ-470X	CAPACITOR	47pF,50V
		R36	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R38	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R40	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R41	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R42	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R46	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R48	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R51	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R68	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R70	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R77	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R79	NCB21AK-105X	CAPACITOR	1μF,10V
		R88	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R90	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R92	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R93	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R104	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R113	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R114	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R117	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R401	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R402	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R403	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R404	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R405	NRSA02J-683X	MG RESISTOR	68kΩ,1/10W
		R406	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R407	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R408	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R409	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2001	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R2002	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R2003	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2005	QRE141J-0R0Y	RESISTOR	0Ω,1/4W
		R2006	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R2007	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2008	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2009	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2010	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2011	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2013	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2014	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R2015	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R2016	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2017	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2018	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2019	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2025	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2053	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2056	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2057	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2058	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2059	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2060	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2061	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2062	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
		R2063	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R2064	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2065	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2201	NRSA02J-680X	MG RESISTOR	68Ω,1/10W
		R2202	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2203	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2204	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2205	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2206	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2208	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2209	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2210	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2211	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2213	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2215	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2217	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R2218	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2219	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R2220	NRSA02J-393X	MG RESISTOR	39kΩ,1/10W
		R2222	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2223	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2224	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2225	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R2226	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2227	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2228	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2229	QRE141J-563Y	RESISTOR	56kΩ,1/4W
		R2232	NRSA02J-680X	MG RESISTOR	68Ω,1/10W
		R2251	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2252	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3011	QUY160-100Y	IM BUS WIRE	
		R3012	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3013	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3016	QUY160-100Y	IM BUS WIRE	
		R3017	QUY160-100Y	IM BUS WIRE	
		R3018	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R3019	QUY160-100Y	IM BUS WIRE	
		R3022	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3025	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3026	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3027	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3029	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3030	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3032	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3034	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3038	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R3040	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3041	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3042	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3044	QUY153-050Y	IM BUS WIRE	
		R3046	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3047	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3048	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3049	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3050	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3051	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3052	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3053	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3054	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3055	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3058	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3060	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3061	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3062	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3063	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3066	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R3069	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3071	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3072	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3073	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3074	QUY160-100Y	IM BUS WIRE	
		R3075	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3076	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3079	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3083	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3085	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3086	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3087	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3088	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3089	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3090	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3091	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3094	QUY160-100Y	IM BUS WIRE	
		R3095	QUY160-100Y	IM BUS WIRE	
		R3096	QUY160-100Y	IM BUS WIRE	
		R3097	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3103	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3105	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3106	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3201	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3202	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3203	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3204	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R3205	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R3206	QRE141J-183Y	RESISTOR	18kΩ,1/4W
		R3207	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3208	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3209	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3210	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R3211	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R3212	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R3213	NRSA02J-334X	MG RESISTOR	330kΩ,1/10W
		R3214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3215	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3217	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R3218	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R3219	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3220	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3222	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3223	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3224	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3225	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3229	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R3230	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3231	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3233	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3234	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3235	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3236	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R3237	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R3238	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R3241	NRSA02J-104X	MG RESISTOR	100kΩ,1/10W
		R3242	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3245	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3251	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3256	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3257	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3258	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3260	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3261	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3671	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3672	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3673	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4001	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4003	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4004	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R4005	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4006	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R4007	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4008	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4009	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4010	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4011	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R4012	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R4013	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4014	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R4015	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R4016	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4017	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4018	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4019	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4020	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4021	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5101	QRG02GJ-104	OMF RESISTOR	100kΩ,2W
		R5102	QRE141J-330Y	RESISTOR	33Ω,1/4W
		R5103	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R5104	QRG029J-154G	OMF RESISTOR	150kΩ,2W
		R5105	QRT01DJ-R39X	MF RESISTOR	0.39Ω,1W
		R5106	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R5301	QRE141J-1R0Y	RESISTOR	1Ω,1/4W
		R5302	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5303	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
	⚠	R5304	QRZ9005-221X	FUSI RESISTOR	220Ω,1/4W
		R5305	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R5306	NRSA02J-683X	MG RESISTOR	68kΩ,1/10W
		R5307	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5308	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R5309	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R5313	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R5314	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5317	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R5318	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R5319	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R5321	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R5322	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R5323	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R5327	NRVA02D-303X	CMF RESISTOR	30kΩ,1/10W
		R5329	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5330	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5332	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5334	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R5335	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R5336	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R6020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6021	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6030	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6031	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6032	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R6033	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R6050	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6051	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6052	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6060	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6061	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6080	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R6508	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6510	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R6553	QUY160-100Y	IM BUS WIRE	
		R6554	QUY160-100Y	IM BUS WIRE	
		R7202	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R7203	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R7204	QRE121J-100Y	RESISTOR	10Ω,1/2W
		R7251	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R7252	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R7253	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		B3	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B18	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B42	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B2204	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B2205	QUY153-050Y	IM BUS WIRE	
		B3004	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3005	QUY160-075Y	IM BUS WIRE	
		B3012	QUY160-200Y	IM BUS WIRE	
		B3030	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3063	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3651	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3665	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B5301	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B6001	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B6032	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B6566	QUY160-150Y	IM BUS WIRE	
		B7251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7253	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7254	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7255	QUY160-125Y	IM BUS WIRE	
		C1	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C2	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C3	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C4	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C5	QEKC0JM-476	E CAPACITOR	47μF,6.3V
		C6	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C7	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C8	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C9	QETN1HM-225	E CAPACITOR	2.2μF,50V
		C10	NDC21HG-151X	CAPACITOR	150pF,50V
		C11	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C12	NDC21HJ-8R0X	CAPACITOR	8pF,50V
		C14	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C15	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C16	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C17	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
		C19	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C20	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C21	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C22	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C23	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C24	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C25	NDC21HJ-6R0X	CAPACITOR	6pF,50V
		C26	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C27	NCB21HK-223X	CAPACITOR	0.022μF,50V
		C28	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
		C29	NCB21EK-333X	CAPACITOR	0.033μF,25V
		C30	NCB21CK-474X	CAPACITOR	0.47μF,16V
		C31	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C32	QCBB1HK-103	CAPACITOR	0.01μF,50V
		C33	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C34	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C35	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C36	QEKJ1HM-475	E CAPACITOR	4.7μF,50V
		C38	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C39	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C40	QEKJ1EM-106	E CAPACITOR	10μF,25V
		C45	QCFB1HZ-104	CAPACITOR	0.1μF,50V
		C53	NDC21HJ-101X	CAPACITOR	100pF,50V
		C59	NCB21HK-103X	CAPACITOR	0.01μF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C60	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C61	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C63	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C64	NDC21HJ-220X	CAPACITOR	22pF,50V
		C65	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C71	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C72	NDC21HJ-470X	CAPACITOR	47pF,50V
		C73	NDC21HJ-120X	CAPACITOR	12pF,50V
		C80	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C84	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		C94	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C106	NCB21HK-821X	CAPACITOR	820pF,50V
		C108	NDC21HJ-680X	CAPACITOR	68pF,50V
		C109	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C110	NDC21HJ-820X	CAPACITOR	82pF,50V
		C114	NDC21HJ-181X	CAPACITOR	180pF,50V
		C401	NCB21EK-103X	CAPACITOR	0.01µF,25V
		C402	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C403	NDC21HJ-121X	CAPACITOR	120pF,50V
		C404	NDC21HJ-470X	CAPACITOR	47pF,50V
		C406	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C407	NDC21HJ-150X	CAPACITOR	15pF,50V
		C2001	QETN1HM-475	E CAPACITOR	4.7µF,50V
		C2002	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2003	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C2004	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2005	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
		C2006	NCB21HK-123X	CAPACITOR	0.012µF,50V
		C2007	QEKJ1CM-226	E CAPACITOR	22µF,16V
		C2008	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2009	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C2010	NCB21HK-152X	CAPACITOR	0.0015µF,50V
		C2011	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2012	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2013	NDC21HJ-3R0X	CAPACITOR	3pF,50V
		C2016	NCB21HK-331X	CAPACITOR	330pF,50V
		C2021	NCB21HK-682X	CAPACITOR	0.0068µF,50V
		C2051	NCB21HK-331X	CAPACITOR	330pF,50V
		C2061	QFLC1HJ-333Z	F CAPACITOR	0.033µF,50V
		C2062	NCB21HK-332X	CAPACITOR	0.0033µF,50V
		C2063	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2064	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2201	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C2202	NCB21EK-333X	CAPACITOR	0.033µF,25V
		C2203	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2204	QDGB1HK-102Y	CAPACITOR	0.001µF,50V
		C2205	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C2206	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2207	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C2208	QETN1HM-475	E CAPACITOR	4.7µF,50V
		C2209	QEKJ1HM-104	E CAPACITOR	0.1µF,50V
		C2210	QEKJ1HM-104	E CAPACITOR	0.1µF,50V
		C2211	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C2212	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C2213	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2214	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2215	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C2216	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2217	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2218	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2219	QEKJ1EM-106	E CAPACITOR	10µF,25V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C2220	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
		C2221	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2222	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2223	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
		C2224	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2225	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
		C2226	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2227	NCB21CK-104X	CAPACITOR	0.1µF,16V
		C2228	NCB21CK-104X	CAPACITOR	0.1µF,16V
		C2229	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2230	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2251	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C2252	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2253	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2254	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2255	NDC21HJ-181X	CAPACITOR	180pF,50V
		C3001	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3002	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3003	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C3004	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3008	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C3011	QETL0JM-478	E CAPACITOR	4700µF,6.3V
		C3012	QEKJ0JM-107	E CAPACITOR	100µF,6.3V
		C3015	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3016	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3022	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3024	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3025	QAT3725-300Z	TRIM CAPACITOR, TIMER CLOCK	
		C3026	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3027	NBE20JM-106X	T CAPACITOR	10µF,6.3V
		C3030	NBE20JM-226X	T CAPACITOR	22µF,6.3V
		C3031	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3032	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3033	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3036	NDC21HJ-180X	CAPACITOR	18pF,50V
		C3037	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3040	QCFB1HZ-104	CAPACITOR	0.1µF,50V
		C3050	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3602	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3652	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4002	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4003	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C4004	NBE20JM-226X	T CAPACITOR	22µF,6.3V
		C4006	NBE40JM-476X	T CAPACITOR	47µF,6.3V
		C4007	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C4008	NCB21AK-105X	CAPACITOR	1µF,10V
		C4009	NCB21HK-563X	CAPACITOR	0.056µF,50V
		C4010	NCB21EK-223X	CAPACITOR	0.022µF,25V
		C4011	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4012	NCB21EK-224X	CAPACITOR	0.22µF,25V
		C4013	NCB21HK-563X	CAPACITOR	0.056µF,50V
		C4014	NDC21HJ-101X	CAPACITOR	100pF,50V
		C4015	NDC21HJ-331X	CAPACITOR	330pF,50V
		C4016	NDC21HJ-681X	CAPACITOR	680pF,50V
		C4017	NCB21HK-222X	CAPACITOR	0.0022µF,50V
	⚠	C5001	QFZ9073-683	F CAPACITOR	0.068µF,250V
	⚠	C5002	QFZ9051-333	F CAPACITOR	0.033µF,250V
	⚠	C5004	QCZ9071-222	CAPACITOR	0.0022µF,250V
		C5006	QEZ0375-686	E CAPACITOR	68µF,400V
		C5101	QCZ0212-472	CAPACITOR	0.0047µF,1kV
		C5102	QEMU1VM-276	E CAPACITOR	27µF,35V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C5103	QCZ0302-330Z	CAPACITOR	33pF,1kV
		C5104	QFLC1HJ-471Z	F CAPACITOR	470pF,50V
		C5107	QCZ0353-101Z	CAPACITOR	100pF,1kV
		C5201	QEMU0JM-227	E CAPACITOR	220µF,6.3V
		C5202	QEMT1CM-827	E CAPACITOR	820µF,16V
		C5203	QEMT1AM-228	E CAPACITOR	2200µF,10V
		C5204	QETN2AM-475	E CAPACITOR	4.7µF,100V
		C5205	QETN1HM-106	E CAPACITOR	10µF,50V
		C5206	QEMU1EM-187	E CAPACITOR	180µF,25V
		C5207	QETN1CM-227	E CAPACITOR	220µF,16V
		C5208	QETN1AM-227	E CAPACITOR	220µF,10V
		C5212	QEMU1VM-127	E CAPACITOR	120µF,35V
		C5213	QEMU0JM-227	E CAPACITOR	220µF,6.3V
		C5301	QETM0JM-108	E CAPACITOR	1000µF,6.3V
		C5303	QETN1CM-107	E CAPACITOR	100µF,16V
		C5304	QFVF1HJ-274Z	F CAPACITOR	0.27µF,50V
		C5305	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C5306	QEKJ0JM-107	E CAPACITOR	100µF,6.3V
		C5307	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C5308	QETN1CM-107	E CAPACITOR	100µF,16V
		C5309	QETN1CM-107	E CAPACITOR	100µF,16V
		C6014	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6016	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C6023	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C6032	NCF21EZ-473X	CAPACITOR	0.047µF,25V
		C6033	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C6037	NBE20JM-106X	T CAPACITOR	10µF,6.3V
		C6553	QEKJ0JM-337	E CAPACITOR	330µF,6.3V
		C7202	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C7251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		L1	QQL29BJ-100Z	COIL	10µH
		L2	QQL071J-121Y	COIL	120µH
		L3	QQL29BJ-100Z	COIL	10µH
		L4	QQL29BJ-100Z	COIL	10µH
		L5	QQR0521-012Z	NOISE FILTER	
		L12	QQR0967-001	COIL	12µH
		L13	QQL071J-330Y	COIL	33µH
		L15	QQL29BJ-100Z	COIL	10µH
		L18	QQL071J-220Y	COIL	22µH
		L19	QQL071J-120Y	COIL	12µH
		L20	QUY153-050Y	IM BUS WIRE	
		L24	QQL071J-270Y	COIL	27µH
		L27	QQL071J-330Y	COIL	33µH
		L28	QQL071J-680Y	COIL	68µH
		L401	QQL071J-150Y	COIL	15µH
		L402	QUY153-050Y	IM BUS WIRE	
		L2001	QUY153-050Y	IM BUS WIRE	
		L2251	QQL29BJ-100Z	COIL	10µH
		L2252	QQL29BJ-151Z	COIL	150µH
		L3001	QUY153-050Y	IM BUS WIRE	
		L5201	PELN1184	COIL	33µH
		L5202	PU60944-330K	COIL	33µH
		L6001	QQL29BJ-100Z	COIL	10µH
		L6002	QQL29BJ-100Z	COIL	10µH
		L6004	QQL29BJ-100Z	COIL	10µH
		L6005	QQL29BJ-100Z	COIL	10µH
		L6032	QUY153-050Y	IM BUS WIRE	
		L6501	QUY153-050Y	IM BUS WIRE	
		L7201	QQL01BJ-101Z	COIL	100µH
		X1	QAX0576-001	CRYSTAL RESONATOR	
		X2	QCBB1HK-103	CAPACITOR	0.01µF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		X3001	QAX0445-001	CRYSTAL RESONATOR	
		X3002	QAX0527-001	CRYSTAL RESONATOR	
		S3002	QSW0695-001	PUSH SWITCH,S CASS SW	
		K2001	NQL103K-R10X	COIL	0.1µH
		K2002	NQL103K-R10X	COIL	0.1µH
		K2003	NQL103K-R10X	COIL	0.1µH
		K2004	NQL103K-R10X	COIL	0.1µH
		K2251	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		K2252	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		K2253	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		K5101	QQR0678-001Z	FERRITE BEAD	
		K5102	QQR0678-001Z	FERRITE BEAD	
		K5201	QQR0678-001Z	FERRATE BEADS	
		PC3001	GP3S123	IC(PHOTO SENSOR)	
		PC3002	GP3S123	IC(PHOTO SENSOR)	
	⚠	PC5101	PC123F2	PH COUPLER	
		T2052	PELN0861	OSC TRANSFORMER	
	⚠	T5001	QQS0057-001	SW TRANSFORMER	
		TU6001	QAU0208-002	TUNER	
		ET1	PQ21623-1-5	EARTH PLATE(RF)	
		HS1	LP40621-001A	HEAT SINK,IC5101	
		HS2	LP40479-001B	HEAT SINK,IC5301	
		SD1	LP30720-001A	SHIELD CASE(PRE/REC)	
		OT1	QYTDSF3010Z	SCREW,X2 TERMINAL	
		OT2	PU59915-105	#500SPACER0.01,C45	
		OT3	QYTDST3008Z	SCREW,IC5101	
		OT4	QYTDST3006Z	SCREW,IC5301	
		FC5001	QNG0006-001Z	FUSE CLIP,F5001	
		FC5002	QNG0006-001Z	FUSE CLIP,F5001	
	⚠	LF5001	PELN1204-01-01	LINE FILTER	
	⚠	LF5002	QQR0608-001	LINE FILTER	
		CN1	QGF1028C1-13	FPC CONNECTOR,(1-13)U.DRUM	
		CN902	QGF1207C1-11	FPC CONNECTOR,(1-11)FRONT IN	
		CN903	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL	
		CN904	QGB2024K1-12S	CONNECTOR,(1-12)TERMINAL	
		CN905	QGB2024K1-05S	CONNECTOR,(1-5)TERMINAL	
		CN907	QGB2024K1-10S	CONNECTOR,(1-10)TERMINAL	
		CN2001	QGF1207C1-07	FPC CONNECTOR,(1-7)A/C HEAD	
		CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD	
		CN2051	QGB2024K1-04S	CONNECTOR,(1-4)AUDIO ERASE	
		CN3001	QGF1207C1-05	FPC CONNECTOR,(1-5)DRUM	
		CN3002	QGB2532J1-02	CONNECTOR,(1-2)LOADING MOTOR	
		CN3003	QGB2015M2-08	CONNECTOR,(1-8)CAPSTAN MOTOR	
		CN3004	QGB2534J2-04	CONNECTOR,(1-4)ROTARY ENCODER	
		CN3011	QGF1207C1-14	FPC CONNECTOR,(1-14)FRONT	
		CN3012	QGF1207C1-04	FPC CONNECTOR,(1-4)ADV.JOG	
	⚠	CN5001	QGA7901C3-02	CONNECTOR,(1-2)AC IN	
	⚠	CP4001	ICP-N25	CIRCUIT PROTECTOR	
	⚠	CP5301	ICP-N38	CIRCUIT PROTECTOR	
	⚠	CP5302	ICP-N25	CIRCUIT PROTECTOR	
		CP5303	QUY153-050Y	IM BUS WIRE	
	⚠	F5001	QMF51E2-2R0J1	FUSE	T2.0A,AC250V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
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3D DIGITAL/2M BOARD ASSEMBLY <05>

		PW1	LPA10105-05A	3D DIGITAL/2M BOARD ASSY
		IC1401	JCP8026	IC
	⚠	Q1401	2SC1317/RS/-T	TRANSISTOR
		Q1402	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1403	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1404	DTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q1406	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1407	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1408	2SC4081/S/-X	TRANSISTOR
		Q1410	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q1412	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q1413	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1414	DTC144WU	TRANSISTOR
			or RN1309	TRANSISTOR
			or UN521E	TRANSISTOR
		Q1417	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q1418	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q1419	DTC124TU	TRANSISTOR
		Q1420	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		D1401	RD4.3ES/B3/-T2	ZENER DIODE
		D1402	1SS133	DIODE
			or 1N4148M	DIODE
		R1401	NRSA02J-181X	MG RESISTOR 180Ω,1/10W
		R1402	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
		R1404	NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W
		R1406	NRSA02J-471X	MG RESISTOR 470Ω,1/10W
		R1407	NRSA02J-272X	MG RESISTOR 2.7kΩ,1/10W
		R1408	NRSA02J-122X	MG RESISTOR 1.2kΩ,1/10W
		R1410	NRSA02J-391X	MG RESISTOR 390Ω,1/10W
		R1411	NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
		R1413	NRSA02J-331X	MG RESISTOR 330Ω,1/10W
		R1414	NRSA02J-821X	MG RESISTOR 820Ω,1/10W
		R1415	NRSA02J-221X	MG RESISTOR 220Ω,1/10W
		R1416	NRSA02J-104X	MG RESISTOR 100kΩ,1/10W
		R1417	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
		R1418	NRSA02J-471X	MG RESISTOR 470Ω,1/10W
		R1421	NRSA02J-391X	MG RESISTOR 390Ω,1/10W
		R1426	NRSA02J-561X	MG RESISTOR 560Ω,1/10W
		R1427	NRSA02J-333X	MG RESISTOR 33kΩ,1/10W
		R1428	NRSA02J-393X	MG RESISTOR 39kΩ,1/10W
		R1429	NRSA02J-152X	MG RESISTOR 1.5kΩ,1/10W
		R1430	NRSA02J-222X	MG RESISTOR 2.2kΩ,1/10W
		R1431	NRSA02J-821X	MG RESISTOR 820Ω,1/10W
		R1432	NRSA02J-182X	MG RESISTOR 1.8kΩ,1/10W
		R1433	NRSA02J-510X	MG RESISTOR 51Ω,1/10W
		R1434	NRSA02J-153X	MG RESISTOR 15kΩ,1/10W
		R1435	NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
		R1436	NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
		R1437	NRSA02J-392X	MG RESISTOR 3.9kΩ,1/10W
		R1438	NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
		R1439	NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
		R1440	NRSA02J-473X	MG RESISTOR 47kΩ,1/10W
		R1441	NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
		R1442	NRSA02J-682X	MG RESISTOR 6.8kΩ,1/10W
		R1446	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1447	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1448	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1449	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1450	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1452	NRSA02J-471X	MG RESISTOR 470Ω,1/10W
		R1453	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1454	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
		R1455	NRSA02J-681X	MG RESISTOR 680Ω,1/10W
		R1458	NRSA02J-681X	MG RESISTOR 680Ω,1/10W
		R1459	NRSA02J-681X	MG RESISTOR 680Ω,1/10W
		R1460	NRSA02J-273X	MG RESISTOR 27kΩ,1/10W
		R1461	NRSA02J-121X	MG RESISTOR 120Ω,1/10W
		R1463	NRSA02J-101X	MG RESISTOR 100Ω,1/10W
		VR1401	QVZ3521-103Z	V RESISTOR, D/A LEVEL ADJ.
		B1412	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
		C1401	QEKJ1CM-336	E CAPACITOR 33μF,16V
		C1402	NCB21HK-103X	CAPACITOR 0.01μF,50V
		C1403	QEKJ0JM-337	E CAPACITOR 330μF,6.3V
		C1404	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1405	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1406	NCB21HK-103X	CAPACITOR 0.01μF,50V
		C1407	NDC21HJ-680X	CAPACITOR 68pF,50V
		C1408	NDC21HJ-330X	CAPACITOR 33pF,50V
		C1410	QEKJ1EM-475	E CAPACITOR 4.7μF,25V
		C1411	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1412	NDC21HJ-680X	CAPACITOR 68pF,50V
		C1413	NDC21HJ-330X	CAPACITOR 33pF,50V
		C1415	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1416	QEKJ1CM-106	E CAPACITOR 10μF,16V
		C1417	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1421	NDC21HJ-330X	CAPACITOR 33pF,50V
		C1422	NDC21HJ-680X	CAPACITOR 68pF,50V
		C1423	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1424	NCB21HK-103X	CAPACITOR 0.01μF,50V
		C1425	NCB21HK-103X	CAPACITOR 0.01μF,50V
		C1426	NDC21HJ-390X	CAPACITOR 39pF,50V
		C1428	NDC21HJ-220X	CAPACITOR 22pF,50V
		C1429	QEKJ0JM-337	E CAPACITOR 330μF,6.3V
		C1430	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1432	NCF21CZ-105X	CAPACITOR 1μF,16V
		C1433	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1435	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1436	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1437	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1438	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1439	NCF21CZ-105X	CAPACITOR 1μF,16V
		C1440	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1441	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1442	NCF21CZ-105X	CAPACITOR 1μF,16V
		C1444	NCF21EZ-104X	CAPACITOR 0.1μF,25V
		C1445	NCF21EZ-104X	CAPACITOR 0.1μF,25V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C1446	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1447	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1448	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1449	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1450	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1451	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C1452	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1453	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1454	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1455	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1463	QEKJ0JM-336	E CAPACITOR	33µF,6.3V
		C1468	NDC21HJ-101X	CAPACITOR	100pF,50V
		C1470	NDC21HJ-330X	CAPACITOR	33pF,50V
		C1471	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1472	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1473	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		L1401	QQL29BJ-100Z	COIL	10µH
		L1402	QQL071J-6R8Y	COIL	6.8µH
		L1403	QQL071J-6R8Y	COIL	6.8µH
		L1404	QQL071J-6R8Y	COIL	6.8µH
		L1405	QQL01BJ-101Z	COIL	100µH
		L1406	QQL071J-330Y	COIL	33µH
		L1407	QQL01BJ-101Z	COIL	100µH
		L1409	QQL071J-1R0Y	COIL	1.0µH
		LC1401	QQR0521-007Z	NOISE FILTER	
		LC1402	QQR0521-006Z	NOISE FILTER	
		SD1	LP30706-001C	SHIELD FRAME(S-VHS)	
		SD2	LP30684-001A	SHIELD CASE(S-VHS)	
		CN1401	QGG2502K1-17	HEADER PIN, (1-17)MAIN	

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TERMINAL BOARD ASSEMBLY <06>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10100-22B	TERMINAL BOARD ASSY	
		IC201	LC74775-9750	IC	
		IC901	BH7636S	IC	
		Q207	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q901	UN5211	TRANSISTOR	
			or RN1302	TRANSISTOR	
			or PDTC114EU	TRANSISTOR	
			or DTC114EU	TRANSISTOR	
		Q902	2SB1218A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
		Q903	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q904	2SB1218A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
		Q905	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q906	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q907	2SD1819A/QRS/-X	TRANSISTOR	
			or 2SC4081/QRS/-X	TRANSISTOR	
			or 2PC4081/R/-X	TRANSISTOR	
		Q908	2SB1218A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
		Q909	2SB1218A/QR/-X	TRANSISTOR	
			or 2SA1576A/QR/-X	TRANSISTOR	
			or 2PA1576/R/-X	TRANSISTOR	
		Q911	UN521E	TRANSISTOR	
			or RN1309	TRANSISTOR	
			or DTC144WU	TRANSISTOR	
			or PDTC144WU	TRANSISTOR	
		Q912	UN5215	TRANSISTOR	
			or RN1311	TRANSISTOR	
			or DTC114TU	TRANSISTOR	
			or PDTC114TU	TRANSISTOR	
		D201	QRE141J-152Y	RESISTOR	1.5kΩ,1/4W
		D205	1SS133	DIODE	
		R202	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R208	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R209	NRSA02J-512X	MG RESISTOR	5.1kΩ,1/10W
		R210	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R211	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R212	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R213	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R214	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R216	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R218	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R901	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R902	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R903	NRSA02J-680X	MG RESISTOR	68Ω,1/10W
		R904	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R905	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R906	NQL402M-100X	COIL	100µH
		R907	NQL402M-100X	COIL	10µH
		R908	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R909	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R910	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R911	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R912	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R913	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R914	NQL402M-100X	COIL	10µH
		R915	NQL402M-100X	COIL	10µH
		R916	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R917	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R918	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R919	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R920	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R921	QRE123J-391X	RESISTOR	390Ω,1/2W
		R922	QRE123J-391X	RESISTOR	390Ω,1/2W
		R923	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R924	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R931	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R932	NRSA02J-511X	MG RESISTOR	510Ω,1/10W
		R933	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R934	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R935	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R936	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R937	QRE141J-101Y	RESISTOR	100Ω,1/4W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R938	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R939	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R940	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R941	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R942	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R943	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R944	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R945	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R946	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R947	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R949	QRE123J-331X	RESISTOR	330Ω,1/2W
		R951	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R952	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R953	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R964	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R965	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		B201	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B216	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B901	QUY153-050Y	IM BUS WIRE	
		C201	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C204	NDC21HJ-100X	CAPACITOR	10pF,50V
		C206	NDC21HJ-330X	CAPACITOR	33pF,50V
		C207	NDC21HJ-330X	CAPACITOR	33pF,50V
		C209	NCB21CK-474X	CAPACITOR	0.47µF,16V
		C210	NDC21HJ-101X	CAPACITOR	100pF,50V
		C211	NDC21HJ-101X	CAPACITOR	100pF,50V
		C212	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C213	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C214	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C215	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C216	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C217	NDC21HJ-560X	CAPACITOR	56pF,50V
		C218	NCB21AK-105X	CAPACITOR	1µF,10V
		C222	NCB21AK-105X	CAPACITOR	1µF,10V
		C225	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C901	NCB21HK-331X	CAPACITOR	330pF,50V
		C902	NCB21HK-331X	CAPACITOR	330pF,50V
		C903	NCB21HK-471X	CAPACITOR	470pF,50V
		C904	NCB21HK-471X	CAPACITOR	470pF,50V
		C905	NCB21HK-331X	CAPACITOR	330pF,50V
		C906	NCB21HK-331X	CAPACITOR	330pF,50V
		C907	NCB21HK-471X	CAPACITOR	470pF,50V
		C908	NCB21HK-471X	CAPACITOR	470pF,50V
		C910	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C912	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C913	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C914	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C915	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C916	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C917	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C918	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C921	NDC21HJ-330X	CAPACITOR	33pF,50V
		C923	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C924	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C925	NCB21HK-223X	CAPACITOR	0.022µF,50V
		C927	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C930	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C931	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C933	NCB21HK-331X	CAPACITOR	330pF,50V
		C934	NCB21HK-331X	CAPACITOR	330pF,50V
		C935	NCB21HK-471X	CAPACITOR	470pF,50V
		C936	NCB21HK-471X	CAPACITOR	470pF,50V
		C937	NCB21HK-331X	CAPACITOR	330pF,50V
		C938	NCB21HK-331X	CAPACITOR	330pF,50V
		C939	NCB21HK-471X	CAPACITOR	470pF,50V
		C940	NCB21HK-471X	CAPACITOR	470pF,50V
		C941	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C942	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C943	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C945	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C946	QEKJ1CM-106	E CAPACITOR	10µF,16V
		C947	QETJ0JM-477	E CAPACITOR	470µF,6.3V
		C951	QEKC1CM-476	E CAPACITOR	47µF,16V
		L201	QQL29BK-1R0Z	COIL	1.0µH
		L202	QQL071J-330Y	COIL	33µH
		L203	QQL071J-220Y	COIL	22µH
		L204	QQL29BJ-100Z	COIL	10µH
		L205	QUY153-050Y	IM BUS WIRE	
		L206	QQL071J-220Y	COIL	22µH
		L901	QQL231J-R22Y	COIL	0.22µH
		L902	QQL071J-1R0Y	COIL	1.0µH
		L903	QQL071J-150Y	COIL	15µH
		L904	QQL071J-150Y	COIL	15µH
		L905	QUY153-050Y	IM BUS WIRE	
		L906	QUY153-050Y	IM BUS WIRE	
		L907	QUY153-050Y	IM BUS WIRE	
		L910	QQL071J-1R0Y	COIL	1.0µH
		L913	QQL071J-4R7Y	COIL	4.7µH
		L914	QQL071J-4R7Y	COIL	4.7µH
		L915	QQL071J-4R7Y	COIL	4.7µH
		L916	QQL071J-4R7Y	COIL	4.7µH
		L917	QQL071J-4R7Y	COIL	4.7µH
		L918	QQL071J-4R7Y	COIL	4.7µH
		L919	QQL071J-4R7Y	COIL	4.7µH
		L920	QQL071J-4R7Y	COIL	4.7µH
		ET1	PQ21987-1-1	EARTH PLATE(TERMINAL)	
		J901	PEMC1177	RGB21PIN SOCKET,AV1	
		J902	PEMC1177	RGB21PIN SOCKET,AV2	
		J903	QND0084-001	S JACK,S OUT	
		J912	QNN0023-003	PIN JACK,A.OUT(L)	
		J913	QNN0023-002	PIN JACK,A.OUT(R)	
		J923	PEMC1190	MINI JACK,JLIP	
		J924	QNS0150-001	2.5 JACK,LANC	
		J925	PU60659	MINI JACK,SAT.CTL	
		J926	PU60659	MINI JACK,PAUSE/RAE	
	⚠	TB1	LP30712-008B	TERMINAL BOARD ASSY	
		OT1	QYTDSF3008Z	SCREW,X8	
		CN911	QGF1208F1-14	FPC CONNECTOR,(1-14)S-SUB	
		CN912	QGF1208F1-08	FPC CONNECTOR,(1-8)NAVIGATION	
		CN913	QGB2024J1-12S	CONNECTOR,(1-12)MAIN	
		CN914	QGB2024J1-12S	CONNECTOR,(1-12)MAIN	
		CN915	QGB2024J1-05S	CONNECTOR,(1-5)MAIN	
		CN917	QGB2024J1-10S	CONNECTOR,(1-10)MAIN	

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A/C HEAD BOARD ASSEMBLY <12>

	PW1	LPA10010-01A1	A/C HEAD BOARD ASSY
	CN1	QGF1208F1-07	FPC CONNECTOR,(1-7)MAIN

DEMOD BOARD ASSEMBLY <14>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10094-04A	DEMOD BOARD ASSY	
		IC6701	MSP3417D	IC	
			or MSP3417DG3	IC	
			or MSP3417G	IC	
		Q6701	2SC3936/BC/-X	TRANSISTOR	
		D6701	1SS133	DIODE	
			or 1N4148M	DIODE	
		R6701	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R6702	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R6703	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
		R6704	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6705	NRSA02J-271X	MG RESISTOR	270Ω,1/10W
		R6706	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6707	NQR0200-003X	FERRITE BEAD	
		R6708	NQR0200-003X	FERRITE BEAD	
		R6709	NQR0200-003X	FERRITE BEAD	
		R6710	NQR0200-003X	FERRITE BEAD	
		R6711	NRSA02J-684X	MG RESISTOR	680kΩ,1/10W
		R6712	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6714	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6716	NQR0200-003X	FERRITE BEAD	
		R6719	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R6720	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R6721	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		C6701	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6704	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6705	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C6707	NDC21HJ-470X	CAPACITOR	47pF,50V
		C6708	NDC21HJ-7R0X	CAPACITOR	7pF,50V
		C6709	NDC21HJ-3R0X	CAPACITOR	3pF,50V
		C6713	NCF21CZ-224X	CAPACITOR	0.22μF,16V
		C6714	NCB21HK-222X	CAPACITOR	0.0022μF,50V
		C6715	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C6716	NCB21HK-222X	CAPACITOR	0.0022μF,50V
		C6717	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C6719	QEKJ1EM-106	E CAPACITOR	10μF,25V
		C6720	QEKJ1EM-106	E CAPACITOR	10μF,25V
		C6721	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C6723	NCB21HK-103X	CAPACITOR	0.01μF,50V
		L6701	QUY153-050Y	IM BUS WIRE	
		L6702	QQL231J-3R3Y	COIL	3.3μH
		X6701	QAX0443-001	CRYSTAL RESONATOR	
		K6701	NRSA02J-330X	MG RESISTOR	33Ω,1/10W
		K6702	NQR0200-003X	FERRITE BEAD	
		K6703	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		K6704	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		K6705	NRSA02J-100X	MG RESISTOR	10Ω,1/10W
		K6706	NRSA02J-470X	MG RESISTOR	47Ω,1/10W
		BK1	LP40425-001A	BRACKET(BOARD)	
		CN6701	QGG2502K1-10	HEADER PIN,(1-10)MAIN	

S-SUB BOARD ASSEMBLY <15>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		PW1	LPA10103-07A	S-SUB BOARD ASSY	
		IC501	JCP8018	IC	
			or JCP8028	IC	
			or JCP8038	IC	
			or JCP8028-01	IC	
		IC502	VC2076DP	IC	
		R503	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R504	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R505	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R506	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R507	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R508	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R509	NRSA02J-162X	MG RESISTOR	1.6kΩ,1/10W
		R510	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R511	NRVA02D-471X	CMF RESISTOR	470Ω,1/10W
		R512	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R513	NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
		R514	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R515	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R516	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R517	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R525	NRSA02J-125X	MG RESISTOR	1.2MΩ,1/10W
		R526	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R527	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R531	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R532	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R533	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R534	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R535	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R536	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		B501	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C501	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C502	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C503	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C504	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C505	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C506	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C507	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C508	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C509	QEKJ1CM-106	E CAPACITOR	10μF,16V
		C510	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C511	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C512	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C513	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C514	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C515	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C516	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C518	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C519	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C520	QERF1EM-475	E CAPACITOR	4.7μF,25V
		C521	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C522	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C523	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C524	NDC21HG-301X	CAPACITOR	300pF,50V
		C525	NDC21HG-301X	CAPACITOR	300pF,50V
		C526	NDC21HJ-101X	CAPACITOR	100pF,50V
		C527	NDC21HJ-181X	CAPACITOR	180pF,50V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C528	NDC21HG-271X	CAPACITOR	270pF,50V
		C529	NDC21HG-820X	CAPACITOR	82pF,50V
		C530	NDC21HG-221X	CAPACITOR	220pF,50V
		C531	NDC21HG-301X	CAPACITOR	300pF,50V
		C532	NDC21HG-301X	CAPACITOR	300pF,50V
		C533	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C534	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C535	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C551	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C553	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C554	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C556	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C557	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C559	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C560	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C561	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C568	NDC21HJ-680X	CAPACITOR	68pF,50V
		C569	NDC21HJ-680X	CAPACITOR	68pF,50V
		C570	NDC21HJ-680X	CAPACITOR	68pF,50V
		C571	NDC21HJ-680X	CAPACITOR	68pF,50V
		C572	NDC21HJ-680X	CAPACITOR	68pF,50V
		C573	NDC21HJ-680X	CAPACITOR	68pF,50V
		L501	QQL29BJ-100Z	COIL	10µH
		L503	QQL29BJ-100Z	COIL	10µH
		L504	QQL29BJ-100Z	COIL	10µH
		BK1	LP40077-001A	BRACKET(BOARD)	
		CN511	QGG2503K2-30	HEADER PIN,(1-30)MAIN	
		CN512	QGF1209F2-14	FFC/FPC CONNECTOR,(1-14)TERMINAL	

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NAVIGATION BOARD ASSEMBLY <19>

	PW1	LPA10145-05A	NAVIGATION BOARD ASSY
	IC3301	MN101C49GCH	IC
		or MN101CP12GAFCH	IC
		or MN101CP49KAFCH	IC
	IC3401	74HC4053D	IC
	IC3402	74HC4053D	IC
	IC3403	AT45D011-SC-X	IC
	IC3405	TC7W241FU	IC(DIGITAL)
	IC3406	TC7W241FU	IC(DIGITAL)
	D3401	RB751V-40-X	SB DIODE
	D3402	RB751V-40-X	SB DIODE
	D3407	1SS355	DIODE
	R3302	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3313	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3321	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3322	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3323	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3326	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
	R3328	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3329	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3330	NRSA02J-0R0X	MG RESISTOR 0Ω,1/10W
	R3331	NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
	R3332	NRSA02J-223X	MG RESISTOR 22kΩ,1/10W
	R3333	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W
	R3339	NRSA02J-102X	MG RESISTOR 1kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3340	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3342	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3343	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3345	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3346	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3347	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3348	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3349	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3350	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3351	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3352	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3371	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3372	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3373	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3386	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3401	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3402	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3403	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3404	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3412	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3414	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3415	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3422	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3432	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3462	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3465	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3466	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3468	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3472	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3475	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		B3301	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3405	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3406	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3407	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3408	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3409	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3410	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C3312	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3313	NDC21HJ-120X	CAPACITOR	12pF,50V
		C3314	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3321	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3322	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3323	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3333	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3345	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3346	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3347	NDC21HJ-220X	CAPACITOR	22pF,50V
		C3401	QEKJ0JM-226	E CAPACITOR	22µF,6.3V
		C3402	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3403	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3404	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3405	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C3414	NCB21EK-104X	CAPACITOR	0.1µF,25V
		X3301	QAX0584-001	CRYSTAL RESONATOR	
		BK1	LP40425-001A	BRACKET(PWB)	
		CN3401	QGG2502K1-13	HEADER PIN,(1-13)MAIN	
		CN3402	QGF1207F1-08	FPC CONNECTOR,(1-8)TERMINAL	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

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SW/DISPLAY BOARD ASSEMBLY <28>

		PW1	LPA10148-01B1	SW/DISPLAY BOARD ASSY	
		IC7001	M35500BFP	IC	
			or M35500AGP	IC	
			or M35500BGP	IC	
		IC7002	GP1U281X	IR DETECT UNIT	
			or PNA4652M00XB	IR DETECT UNIT	
		D7002	RD9.1ES/B2/-T2	ZENER DIODE	
			or MTZJ9.1B	ZENER DIODE	
		D7004	1SS133	DIODE	
			or 1SS270A	DIODE	
		D7005	1SS133	DIODE	
			or 1SS270A	DIODE	
		D7008	QUY153-050Y	IM BUS WIRE	
		D7009	SLR-342MC3F	LE DIODE,SVHS ET	
		D7010	SLR-342VC3F	LE DIODE,SAT.TIMER	
		R7001	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7002	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7003	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7004	QRE141J-471Y	RESISTOR	470Ω,1/4W
		R7005	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7006	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7007	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7008	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7013	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7014	QUY153-050Y	IM BUS WIRE	
		R7015	QUY153-050Y	IM BUS WIRE	
		R7020	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7021	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
		R7022	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
		R7023	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R7024	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
		R7025	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R7026	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R7027	QRE141J-153Y	RESISTOR	15kΩ,1/4W
		R7028	QRE141J-393Y	RESISTOR	39kΩ,1/4W
		R7030	QRE141J-103Y	RESISTOR	10kΩ,1/4W
		R7031	QRE141J-122Y	RESISTOR	1.2kΩ,1/4W
		R7032	QRE141J-182Y	RESISTOR	1.8kΩ,1/4W
		R7033	QRE141J-222Y	RESISTOR	2.2kΩ,1/4W
		R7034	QRE141J-272Y	RESISTOR	2.7kΩ,1/4W
		R7035	QRE141J-472Y	RESISTOR	4.7kΩ,1/4W
		R7036	QRE141J-682Y	RESISTOR	6.8kΩ,1/4W
		R7037	QRE141J-563Y	RESISTOR	56kΩ,1/4W
		R7040	QRE141J-331Y	RESISTOR	330Ω,1/4W
		R7041	QRE141J-331Y	RESISTOR	330Ω,1/4W
		B7001	QUY153-050Y	IM BUS WIRE	
		B7003	QUY160-100Y	IM BUS WIRE	
		C7001	QCFB1HZ-104	CAPACITOR	0.1μF,50V
		C7007	QETN1HM-476	E CAPACITOR	47μF,50V
		C7009	QCSB1HJ-150	CAPACITOR	15pF,50V
		C7010	QCFB1HZ-104	CAPACITOR	0.1μF,50V
		C7011	QETN1AM-227	E CAPACITOR	220μF,10V
		C7019	QDVB1EZ-223Y	CAPACITOR	0.022μF,25V
		C7023	QEKC1HM-106	E CAPACITOR	10μF,50V
		L7001	QQL29BK-1R0Z	COIL	1.0μH
		S7001	QSW0456-002Z	TACT SWITCH,POWER	
		S7002	QSW0456-002Z	TACT SWITCH,MARK	
		S7003	QSW0456-002Z	TACT SWITCH,ERASE	
		S7004	QSW0456-002Z	TACT SWITCH,REC	
		S7005	QSW0456-002Z	TACT SWITCH,PAUSE	
		S7006	QSW0456-002Z	TACT SWITCH,PLAY	
		S7007	QSW0456-002Z	TACT SWITCH,24H TIMER	
		S7008	QSW0456-002Z	TACT SWITCH,A.DUB	
		S7009	QSW0456-002Z	TACT SWITCH,INSERT	
		S7010	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
		S7011	QSW0456-002Z	TACT SWITCH,TIMER	
		S7012	QSW0456-002Z	TACT SWITCH,SVHS ET	
		S7013	QSW0456-002Z	TACT SWITCH,SAT.TIMER	
		S7014	QSW0456-002Z	TACT SWITCH,C.RESET	
		S7015	QSW0456-002Z	TACT SWITCH,SYNC.EDIT	
		DI7001	QLF0032-002	FL TUBE	
		HD1	LP30428-001A	FDP HOLDER(L),DI7001	
		HD2	LP30429-001A	FDP HOLDER(R),DI7001	
		HD3	PQM30038-2-2	LED HOLDER,D7009	
		HD4	PQM30038-2-2	LED HOLDER,D7010	
		CN7001	QGF1201C2-14	FPC CONNECTOR,(1-14)MAIN	

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REC SAFETY BOARD ASSEMBLY <32>

		PW3	LPA10148-01A3	REC SAFETY BOARD ASSY	
		S7041	QSW0602-004	PUSH SWITCH,REC SAFETY	
		FW7001	QUM022-07A4A4	P.R. WIRE,SW/DISPLAY	

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JACK BOARD ASSEMBLY <36>

		PW2	LPA10148-01A2	JACK BOARD ASSY	
		R7192	QUY153-050Y	IM BUS WIRE	
		C7192	QCBB1HK-681	CAPACITOR	680pF,50V
		C7194	QCBB1HK-681	CAPACITOR	680pF,50V
		L7191	QRE141J-101Y	RESISTOR	100Ω,1/4W
		L7192	QRE141J-101Y	RESISTOR	100Ω,1/4W
		L7193	QUY153-050Y	IM BUS WIRE	
		L7194	QUY153-050Y	IM BUS WIRE	
		J7191	QNN0371-004	PIN JACK,FRONT V IN	
		J7192	QNN0371-003	PIN JACK,FRONT L IN	
		J7193	QNN0372-002	PIN JACK,FRONT R IN	
		J7194	QND0085-001	S JACK,FRONT S IN	
		CN7191	QGF1201C1-11	FPC CONNECTOR,(1-11)MAIN	

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ADV.JOG BOARD ASSEMBLY <38>

		PW4	LPA10148-01A4	ADV.JOG BOARD ASSY	
		UN7001	QSW0905-001	ROTARY ENCODER	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		CN7004	QGF1208F1-04	FPC CONNECTOR,(1-4)MAIN	

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AUDIO ERASE BOARD ASSEMBLY <46>

PW2	LPA10147-01A2	AUDIO ERASE BOARD ASSY	
Q2051	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
	or 2SD1819A/QRS/-X	TRANSISTOR	
R2054	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
C2052	QFLC1HJ-333Z	F CAPACITOR	0.033µF,50V
C2053	NCB21HK-332X	CAPACITOR	0.0033µF,50V
C2054	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2055	QEKJ1CM-106	E CAPACITOR	10µF,16V
T2051	PELN0860	OSC TRANSFORMER	
CN2052	QGB2024J1-04S	CONNECTOR,(1-4)MAIN	

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LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LPA10010-01A2	L.MOTOR BOARD ASSY
CN1	QGB2533K1-02	CONNECTOR